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VOLUME X NUMBER 4

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Fine Arts in Mass Production ..... JOHN W. HIGGINS 399
Government and Business ..... JULIUS H. BARNES 411
Self-regulation and the Law ..... EDGAR L. HEERMANCE 420
World Stocks, Prices and Controls of Foodstuffs and Raw Materials ROBERT F. MARTIN 430
Planning for the Newsprint Industry ..... STANLEY T. FRAME 441
Discriminating Rates ..... RICHARD S. MERIAM 453
Economic Significance of the Tank Car ..... R. G. SKERRETT 461
Legal Aspects of the Proposed Regulation of the Railroad Holding Company WALTER M. W. SPLAWN 471
Cooperative Advertising through Trade Associations .... NEIL H. BORDEN 482
The Pneumatic Rail Car ..... JOHN S. GULLET 494
Double Features in Motion-picture Exhibition ..... EDWARD R. BEACH 505
The Double-liability Aspect of Bank Stocks ..... ALLEN W. PIKE 516
International Cooperation as a Solution of the Shipping Problem JOHN S. MANUEL, JR. AND WILLIAM S. MANUEL 524

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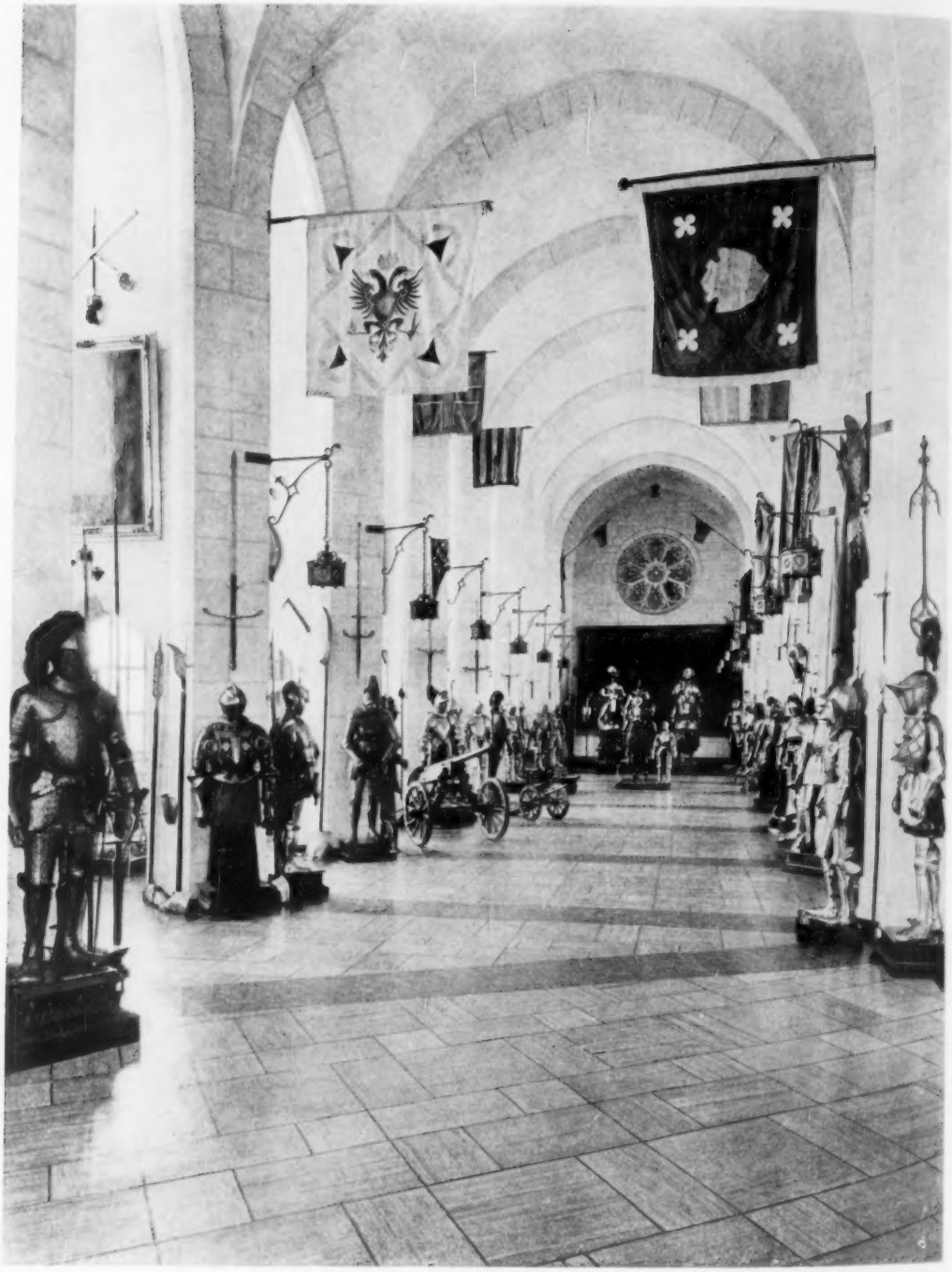


THE JOHN WOODMAN HIGGINS ARMORY, MEDIAEVAL WING

HARVARD BUSINESS REVIEW

JULY
1932

VOLUME X
NUMBER 4

FINE ARTS IN MASS PRODUCTION

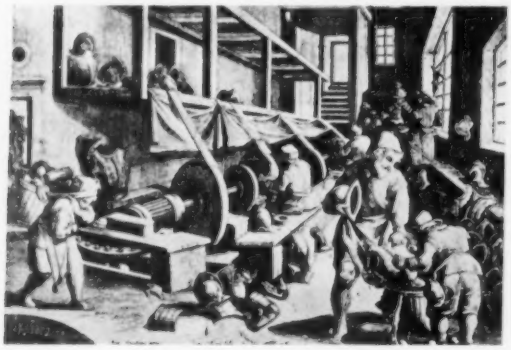
By JOHN WOODMAN HIGGINS

YES, you have dubbed this the Machine Age. You say our houses are dwelling machines and even our furnishings are machines for sitting, bathing, exercising, housekeeping and entertaining. We use machines for playing, working and traveling and most of them run all of the time. But in this period of the world's greatest scientific achievements you should not conclude that the fine arts and classics can rest securely upon their laurels. Their great philosophical, cultural and spiritual leaders died thousands of years ago and, although their dusty old records are still inspiring, this young Machine Age craves the kind of help such great leaders would render if they were living today. Industry seeks aid from the past and the present masters to serve this day in the new spirit.

How thrilling is this scientific zenith, this recognition, this opportunity! But apparently achievement as well as failure unbalances our economic structure. Our outstanding industrial success in applying science and mechanical invention to satisfying an abnormal demand for quantity production during the World War has carried us all so far beyond the point of saturation that industry must now seek a new standard, where not only mechanical precision and efficiency, skill and speed, safety and economy in mass production are still appreciated, but where superqualities of refinement and harmony are attained. The overdoing of a real service has choked our whole system. Having attained high ranking in utilitarian fields, industry now recognizes the necessity of cultivating the field of the aesthetics.

From early chronicles we learn that craftsmen were always called upon to record and express the fine arts—that the ranking master craftsmen were the artists. This natural selection has continued down to our times, but certain orthodox connoisseurs and custodians of ancient masterpieces behave as though they believed that modern manual dexterity would cramp artistic temperament. Industry is now striving to refine the design of all manufactured products, to make the practical beautiful and the beautiful practical. The

improvement in living conditions since the Stone Age is due to man's increased skill in craftsmanship, and industry will continue to augment this improvement. Modern machines supplement rather than substitute manual skill, for the best machines are created by artists of the highest skill. Machines limit no man. They utilize every grade of man and stimulate by example and incentive.



Masterpieces of Fine Arts Created by Quantity Production Methods in 1570, Now Valued at $40 a Pound

One Million Automobiles Extruded by Modern Mass Production in 1930 at 20¢ a Pound

The History of the New England Metal Trades

Let us trace the New England pedigree of a typical self-made craftsman and review the successive steps which have emboldened him to present his credentials and to propose a partnership with that exclusive mistress of the marble temple of fine arts—her vaulted corridors teeming with the world's masterpieces of craftsmanship—built by the earnings of industry.

His Pilgrim and Puritan ancestors were manufacturers by nature. As soon as those first settlers had erected their stockades and meeting-houses, planted their gardens, and organized themselves to preserve their existence on this rock-bound coast, they constructed gristmills, sawmills, tanneries and other industries. Owing to the limitations of the wilderness, many ingenious schemes had to be worked out to make any manufacturing possible. Thus, "Yankee ingenuity" was born.

In 1645 the first American iron furnace was producing iron at "Hammersmith," Lynn, Massachusetts, where ore had been discovered, and within a few years this pioneer enterprise was exporting iron to London at five cents a pound. It is true that the colonies of North Carolina and Virginia had anticipated this iron-smelting venture, but those furnaces, not producing commercially, were abandoned. In Massachusetts was developed a slitting mill for shearing iron-nail rod, and then a wire-drawing mill. Here also the first die for the "Pine-tree Shilling" was cut. Energy, initiative, inventive genius, skill and then refinement have in successive steps marked the progress of the steel industry in New England right down to the present crisis. The cinder piles of this "Little Pittsburgh" near Lynn may be seen today. The Connecticut Valley is dotted with picturesque remains of this pioneer industry, and our trains still stop at "Dover Furnace," "Purdy's Forge," *etc.*

Here our craftsman's *great*-grandfathers, using local ore and fuel, met

the country's demand by producing pig iron at three cents a pound. But richer ore and better coal were soon discovered in Pennsylvania, so his *grandfathers* bought Pittsburgh pig iron, at two cents a pound, and bent all their energies toward converting this into fine machine castings and into steel, which sold at five cents a pound. Nor did his *father* give up when he found that his customers could buy steel from Pittsburgh for even less than his New England production cost. Then he also bought Pittsburgh steel and applied his skill to drawing this into fine wire, rolling and tempering springs, and inventing, designing and building improved machine tools, at ten cents a pound, that dominated the world's markets.

These enforced steps proved to be blessings in disguise. The New England apprenticeship and trade-school systems trained superior mechanics. Our craftsman's father designed and manufactured the first automobiles, but Detroit soon enticed away trainloads of skilled Yankee mechanics by offering higher wages. Then although he, as well as the rest of the world, bought his automobiles from Detroit, the important steel accessories continued to come from New England. Today he continues to produce his share of the light precision parts of pressed-steel alloys, at say twenty cents a pound, but his heavy lines are passing. The West is no longer dependent upon his skill and technical knowledge. His uncles and brothers who migrated west now build their own machine tools from his designs—and he buys them. He yields and shares his basic industries, such as shoes, textiles and metal products. He cannot stop this if he would and, because each depression and loss has stepped him up and switched him to a better line, he wouldn't if he could.

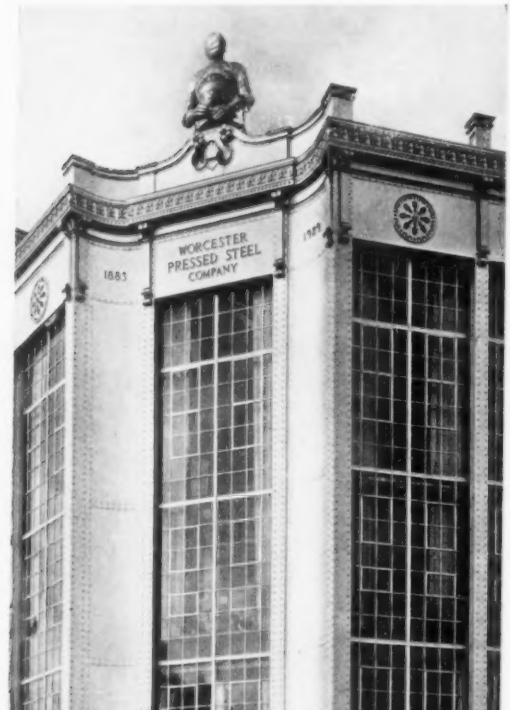
We find that each generation met its own cycle of competition, discouragement, and final refinement. Of course, some stubborn rejects were left by the wayside—*e.g.*, the whip manufacturer, who refused to convert his factory into other lines, preferring to wait for the "automobile fad to blow over." But our metal-tradesman appears to have been ambitious, receptive, resourceful and quick to turn.

What of the Future?

The last bitter blow always seems the worst. The increasing cost of transportation has given his competitors, who "happen to locate" in the center of his richest market, the advantage of being able to sell below his cost and, at the same time, clear what he considers a handsome profit, but which is actually the difference in transportation costs. How will he score in this game? Must he lose his lead and be forced to discard his good hand? Here, in this "neck of the woods," is the doubled freight rate his only handicap, or has success weakened his hold on a heritage of pioneer initiative? Since his wealth is invested in railroad securities, and since the Interstate Commerce Commission blocks the operation of that good old law of "supply and demand," and since he can no longer afford to import materials and reship finished products which sell for less than twenty cents a pound, he finds three courses open to him.

First, move out of New England and into the center of his market. He reasons that abandoned factories and farms are better than decadent villages and degenerate families, but that such migrations will eventually huddle all industry into the middle of the country.

Besides, his heart is attuned to New England hills, lakes, shores and standards.



The Museum and Office Building of This Pressed Steel Company Is Itself Made of Steel

Second, remain here and peddle imported supplies to summer tourists—to his brothers who motor their families back to the Old Homestead each summer. No!

Third, convert his plant to turn out products that will command a price of fifty cents a pound—realizing full well that his children who stay on will have to raise their limit to one dollar a pound. This sounds all right, but he has already wrought into his product pioneer devotion, trained skill, and scientific research and has alloyed all of the useful physical elements available. Although nobody wants his twenty-cent products, people at the same time seem to be buying antiques and imported art objects at prices unrelated to weight or cost of labor and material. According to the magazines, "Art in Industry" is the popular slogan of the ornamenters and the decorators, if not of the stylists. Perhaps a modern-art application—not a mere treatment but a real combination—is the next refining step toward the rejuvenation of all industries located far from their markets.

With a need, an opportunity, and a record like this, our craftsman seeks out the museum of fine arts. After waiting till ten o'clock, paying the admission fee, buying a catalogue, and squeezing through the turnstile, he enters. Instinctively he straightens in admiration of classic marble columns and Gothic tapestries, but he longs for more light. He sees familiar objects and wants to ask a thousand questions. He searches his catalogue, but the descriptions do not touch on his quandaries. He marvels at the details he sees and appreciates the execution. He yearns to examine closely, but the rails, the plate glass, and the "Don't Touch" signs restrain his enthusiasm. Just outside, the streets are crowded with the unemployed, unaware of this treasure palace, and apparently he is the only soul there except the sleepy guard and the scrub-woman mopping the immaculate tile floor. He wanders into galleries of bronze,

silver and iron work. His mind opens and his heart melts in admiration. He finds a suit of rare Gothic armor and a case of princely guns, swords, and locks—masterpieces—but evidently his magnifying glass doesn't satisfy him. Here is a master in his own field—puzzled—and thus he soliloquizes.

What Can Art and Industry Do for Each Other?

The artist who creates a masterpiece confers an everlasting blessing on humanity, but on the other hand the bungler who putters away and constructs a faulty object does a definite harm. Avoidable ugliness is an outrage against civilization, and two ugly objects are twice as outrageous as one; while the mass production of a large number of objects for wide distribution is a matter of serious public concern.

The widest field for the dissemination of culture and beauty is reached by the industrial products of this Machine Age, and engineers who create and design merchandise for distribution to the masses deserve the wholehearted cooperation of art masters. The mass products of nature present the highest qualities of art and beauty in the minutest detail while commonplace, low-priced products which are made in large quantities, are ignored by the cultural art institutions, which hold the key to the situation.

To popularize art, to raise the common standard of appreciation of beauty and harmony in nature, and all expressions of the various fine arts should be the first mission of all true art lovers who have benefited by study and close contact with the world's finer things. Out of the awakened appreciation of faithful workers will come those rare geniuses, who will set advanced standards for future attainment. Fine art fulfills and justifies its elevation only by universal appeal and expression, in a language that is understood by the masses. Opportunities and forms of art are inexhaustible; they are enhanced by repetition and lost only when hoarded in the dark, like pearls which retain their luster only by exposure and by wearing. Nature exhibits her choicest treasures to every comprehending soul.

Why do not our American fine arts museums exploit their masterpieces of painting and sculpture as documents of beauty and design for all artisans and novitiate artists, just as the great European operatic societies utilize their great masterpieces of music? Great operas have been reproduced and copied tens of thousands of times—often indifferently by country choruses under faulty leadership, by ill-tuned hand organs and by squeaky phonographs. When the Italian street sweeper bursts forth into Cavalleria Rusticana as he pushes his broom, no one protests that such mass distribution of the divine art of music is a desecration—that the original score is injured one whit for the full enjoyment of the trained ear of the critic. This system gave us a Caruso.

Oh, that we could merge the inexhaustible but unapplied facilities of the art museum with the intensified production and distribution systems of modern industry, and stimulate an advanced "consumer demand"! We have just observed one of the most significant and encouraging manifestations of the power of an enlightened "consumer demand," augmented by that good old friend, "competition." Our cheapest transportation and perhaps the most universally prized luxury-necessity of every family was the "Tin Lizzie." Twenty million of those ugly things

were extruded by that great Ford chain system of mass production. However much we criticize this product, we owe to this great production system a debt of gratitude. In spite of slams and jokes, the supply of Fords never ceased encircling the globe until suddenly the consumer, finding himself prosperous, became conscious and discriminating. Demand hesitated, and Mr. Ford was forced to shut down for a year, incurring a loss of many millions. When he started again he gave us an artistic automobile. After two years' run on this model, which just about repaid the cost of its new tools, demand stalled again, and Mr. Ford starting all over again is now producing a creditable object of art. Mass production inaugurated a new auto-biography! Observe the buildings, salesrooms, and exhibitions of automobiles—you cannot help seeing them nor can you resist a desire to enter, admire and possess them. Automobiles not only "satisfy consumer demand"; they also cultivate a demand for art—however, they enjoy no monopoly in this circle.

After a few generations of such steps, commercial America will find herself art-minded as well as efficient. Citizens will demand stainless steel lamp posts as beautiful as the bronze works of art which adorn the streets of Paris, masterpieces that will live forever.

Where may the industrial designers find art? Evidently nature is the artist's model. We may never build an automobile so beautiful as a horse, nor an aeroplane so graceful as a soaring gull, a building so majestic as a lofty mountain peak, nor a tower so handsome as a tree. We deal with different materials and conditions. Steel must express itself. In structure, its webby grace captivates the artist's eye—as it did Pennell's. In polished fittings its rich luster reflects a depth like the sheen of the pearl, in contrast to the surface flash of silver. This quality was appreciated by mediaeval artists, who by choice wrought and sculptured in steel. We must not try to substitute or imitate, and the modern artist will not ask our product to violate its purpose. But perhaps in time we may all grow to recognize in the future automobile a masterpiece of fine arts, as well as of efficiency, safety, durability, economy, speed and comfort. Perhaps another generation of critics, less horse-minded than our own, will conclude that a horse with his long stiff legs is not so artistic after all. The machine is freeing us from outworn traditions; we find that art is all in the eye, the brain and the nervous system, that beauty has no relation to age, rarity or price.

This mass production-distribution system will bring masterpieces of fine arts into the homes of all people, just as cylinder printing presses have brought literature, radios have brought music, and the movie-talkie-television is bringing drama. What an opportunity for our institutions of decorative arts of music, drama, literature and religion to serve mankind to higher living!

What Are the Fine Arts Museums Doing?

Some American art museums, first the Newark Museum and now the Metropolitan Museum, for example, are utilizing their opportunities for the dissemination of art recognition and appreciation among the people. Some art museums are still exclusive, austere and gloomy—the mysteries of their dark archives are sacredly reserved for the savants—art for art's sake, rather than art for the people. They have not yet caught the modern-art laboratory idea vibrant in these times.

In 1906 a group of German artists and craftsmen, manufacturers, and merchants organized the *Werkbund*, for the advancement of modern industrial and decorative arts. An intense interest in modern art immediately developed, which kindled great industrial productive activity in Germany and Austria. Several thousand objects of modernistic design in a score of distinct fields were submitted by the *Werkbund* and exhibited in the Newark Art Museum. Other leading museums refused this exhibition as "too commercial," but later shiploads of these "made in Germany" goods found a ready market here in preference to our own. The Werkbund's invitation to reciprocate with a collection of modern American art products remains unheeded but the French critics, concluding that they had been marking time, reorganized and in 1925 at their Exposition of Decorative Arts expressed themselves by exalting the machine and definitely burying all implication that hoary age was a qualifying feature of the fine arts. England, recognizing this new spirit, now has her Design in Industries Association, and so has Sweden, but American art and American industry are still unorganized and apparently quite unmindful of each other. It is true that our Colonial furniture and architecture are recognized as real art contributions, but we cannot thrive by making only period reproductions. Americans are buying modern European industrial art objects to the value of millions of dollars.

Twenty years ago the late John Cotton Dana, Founder and Director of the Newark Museum and Librarian of the Newark Public Library, was bold enough to say, "Art may exist in a teacup of good design as well as in a painting by Titian or Leonardo da Vinci . . . Beauty costs more brains, not more money." One of his most successful exhibitions, based on his theory that art like charity should begin at home, comprised ceramics, textiles, and "silver" objects—all purchased locally for five or ten cents each. But his efforts to organize an American Industrial Decorative Arts Association have so far failed to interest the cultural museums.

Realizing that talent always thrives best under liberal financial patronage, our artists point significantly to the millions that Americans spend for foreign art objects and billions they spend on American automobiles, in reply to our quest for the cause of the dearth in American modern art. If these talented artists understood modern machines and recognized their opportunity to incorporate their art with this mass production, they could bring their talents to the service of beauty and also share in the financial rewards they now see going elsewhere.

Artistic Creation on a Mass-production Scale

The reason we do not make all quantity products beautiful works of art is because we really have not tried, not because we cannot. Necessity is teaching us how, and the day is coming soon when quantity and quality will be combined. All objects of everyday life should be both artistic and appropriate, and some enlightened art organization will utilize a glorified mass-production system to enable all persons to possess "museum specimens" in their own homes.

Slow, laborious hand methods, poor materials, inaccuracies and ignorance are no longer indispensable qualities of fine arts. A million Cellini salt-cellars would not disqualify the original as a masterpiece, but reproductions,

however perfect they may be, will never immortalize our generation. The designers of the past set us high standards to maintain—but not to copy; a million Cellini saltcellars would be a travesty. But the world does need a million modern, artistic, electric clocks, radio cabinets, bathrooms and automobiles. We must create in the spirit of our times, and our designs must be appropriate for multiple production. The task and the opportunity are great, but the reward will be greater. Creation, imagination and art in mass production is the example that nature has set us so generously. No artist discredits one apple blossom because nature produced ten billion just like it—practically interchangeable.

Already the new steel Empire State Building in New York City has set a new standard of architecture. Here is a structure designed for steel and built of steel, expressing the spirit of the Machine Age rather than the handicraftsmanship of the Stone Age handed down.

Industry is not a mere manufacturing machine. It comprehends open-minded research, scientific application, ingenious invention and artistic expression, and presents a field for the broadest imagination. It utilizes the head, the heart, the hand and the machine to express itself, a technique which is entirely consistent with free expression in all the fine arts. American business takes pride in its contributions to the public weal and has invested its earnings liberally for the endowment and promotion of the fine arts and classics. The annual budget of the American museums is $18,000,000; $120,000,000 has been invested in buildings and much more for their contents. Now an accounting is requested, because a real service is required. The architects who sold Greek Temples to these museums erected monumental barriers against modern industrial activities, though taxpayers point with pride to these monuments as they motor by and extol the names of the architects. The engineers who design ships, bridges, aeroplanes, lamps, typewriters or lorgnettes are creating effective instruments of social control which will set the lives of people in efficient and pleasant patterns, or in confused discords. Such tools help shape the lives and behavior of people who see them and use them.

The Metropolitan Museum of Fine Arts barred from her Industrial Art Exhibition objects not produced in quantities. We begin to recognize the stimulating effect of these exhibitions in the furnishings offered to the public, but judging by the atrocious household goods still displayed in those most popular modern museums—the department stores and boardwalk shops—our factories are still in need of help. If our art institutions remain aloof and stop their period displays with a Colonial room, commercial institutions, like the "Five and Ten," will carry on—but how? That industry is receptive and sensitive is shown by the immediate reflection in designs of such current events as the opening of Tut-Ankh-Amen's Tomb and Colonel Lindbergh's transatlantic flight. In fact, all industry is striving to "satisfy consumer demand." Where will this lead us? Who will educate the public to demand and choose the finer houses and furnishings, drama, literature, and other things having art qualifications that will live?

While waiting for our established fine arts museums to rise to this opportunity, every manufacturer should

establish his own specialized industrial art museum, and make it popular, interesting, attractive and educational. Such a museum was opened at Worcester, Massachusetts, last year.

A Museum of the Steel Arts

The John Woodman Higgins Armory at the plant of the Worcester Pressed Steel Company at Worcester, Massachusetts, is a library, research laboratory and collection of pressed steel products, from all places and all times, established with four purposes in view: to interest and inspire the present steel workers, to attract superior recruits for the future, to exalt and extol steel craftsmanship and to inform the public in their choices.

Here the steel worker sees in the finished construction the value of his own labor and his contribution and relation to the onward march of industry. He compares his product with masterpieces of the past—he judges the facilities, the rewards and the lives of his predecessors in this, his chosen trade. He catches the romance of history, the demands of the present, and the call of the future.

Just as the lawyer accumulates documents in his library and the surgeon collects specimens in his laboratory, so every manufacturer, whether of buttons or of dirigibles, should assemble his museum of exhibits representative of his special trade, expressing the service and recording the history of his chosen line. Here he finds himself in that friendly atmosphere where constructive ideas germinate. His reference files expand into a library and his specimen case into a research laboratory. No business can exist long without research nowadays.

This collection of steel products is housed in its own unique steel and glass building adjoining the steel mill. One wing is devoted to modern products, headed by a crowning example of mass production—a modern automobile—ninety *per cent* pressed steel. Typical products of competitors in this line are freely displayed alongside the output of the home mills, and labels bear the manufacturer's name. The other wing is devoted to ancient products, dominated by a group of sixteenth century knights mounted on chargers ready for the tournament, all in full plate armor, and many other superb masterpieces of the armorer's art, now accepted by connoisseurs as examples of fine arts, worthy to take their place among the approved creations of the world's recognized painters and sculptors. The entire main floor is devoted to products of the Steel Age, but inspection may begin in the gallery of the ancient wing, starting with implements of the Stone Age and the Bronze Age, then passing to the Iron Age on to the crusaders' armor and transitional weapons.

School boys visit this Museum, attracted first by the knights in steel armor. They stay to view the steel stampings in the Modern Wing and ask to go into the machine shops adjoining. One boy made sketches and then went home and made himself a suit of armor out of his mother's empty coffee cans, using a pudding mold for the helmet. Now, this boy may never become a Bessemer or a Carnegie, but he will always love steel and he may choose this trade. We need new blood. Why are college graduates choosing to peddle "commercial paper" when the world's richest creative industry needs masters?

Perhaps no class of art objects recalls more vividly the romantic and beautiful nor draws one closer to great

historical personages and stirring events than these masterpieces of the mediaeval armorer who wrought, not in soft gold and silver, nor yet in bronze which was melted and cast, but in steel, the most intractable but rewarding of metals. The best steel armor was in its time more highly prized and more costly than the best pictures and statues, according to the late Dr. Bashford Dean, a trustee of the Metropolitan Museum, who after a lifetime devoted to the study of science, armor and art declared that a complete suit of authentic armor is a hundred thousand times rarer than a good picture.

We catch the spirit of chivalry, heraldry and history from this "Golden Age of Armor," when the greatest contemporary master painters designed these products and the equally recognized iron workers forged them with marvelous skill, and engraved, embossed, case-hardened, damascened and gilded them, fit for their royal patrons, who prized their armor above their paintings and their sculptures. These suits were worn in battle, tournament and parade and at the highest court functions, protecting the lives of heroes who made history for the ages.

Our study of this mediaeval armor arouses our respect and admiration for those early iron workers who, schooled by experience, devotion and love for their work, produced these masterpieces even though handicapped with the crudest tools and materials and with superstition and prejudice.

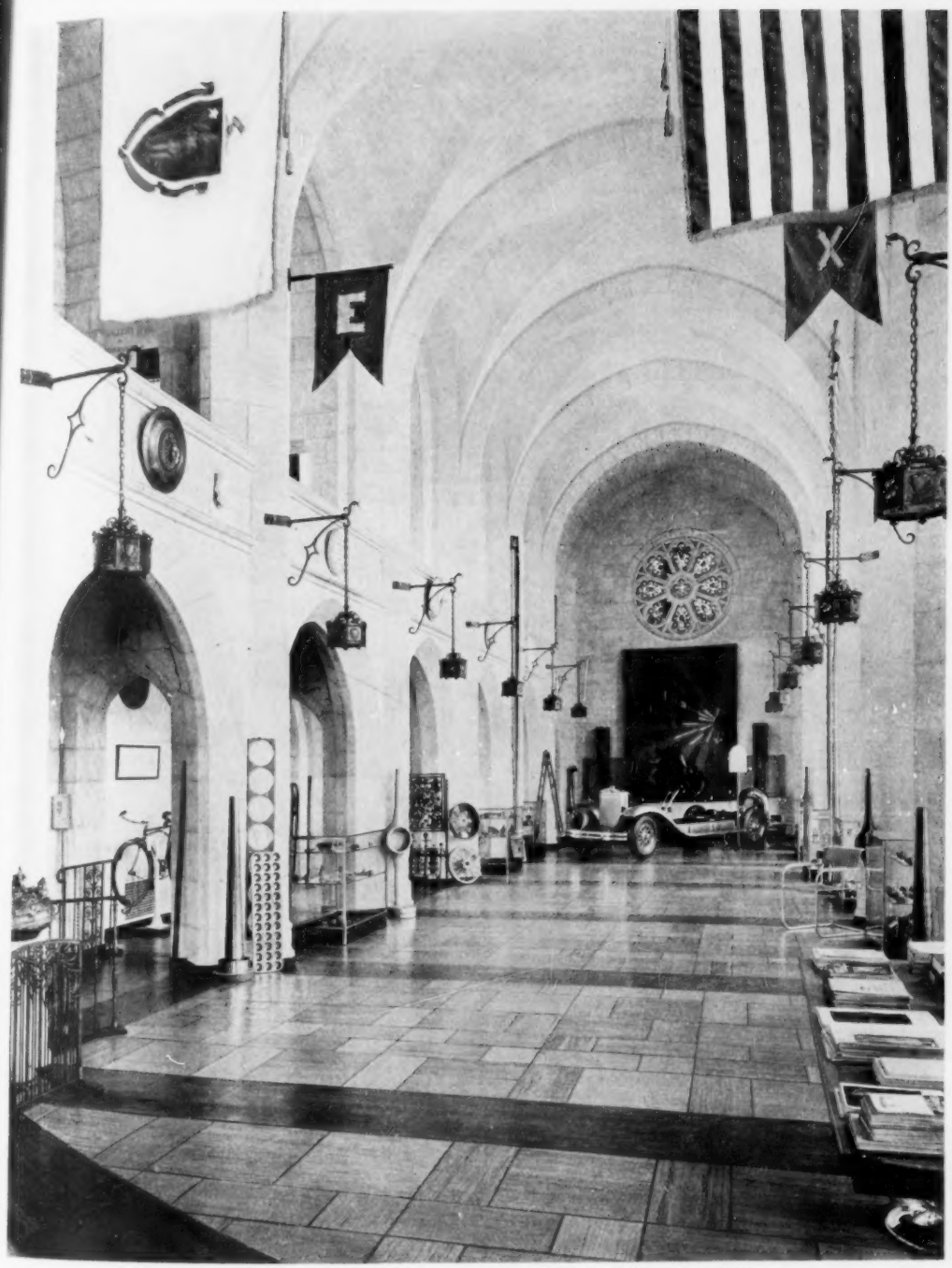
Without a scratch of ornamentation, the early Gothic armor is altogether the most beautiful, because its graceful form, line and articulation fulfilled its purpose, which was to protect the life of its patron without encumbering or impeding his action. With the introduction of gun powder and the final supremacy of firearms, this serious purpose faded. Then quality declined, the jewelers substituted their work of superficial ornamentation, and art disappeared. The world lost two hundred years of progress which we must now regain.

For bullet-proof armor, these iron workers chose their ore from specified mines. We now find that this iron contains manganese in natural alloy. Today manganese is the alloy we use for modern helmets and projectile-proof armor plate. They case-hardened and tested their armor as we do, but our commonest modern steel is far superior and, with our surplus supply, every crusader could have been encased in steel from head to foot.

The museum guides and the thought-provoking labels on the exhibits extol the use of pressed steel and exalt the art of cold rolling, drawing and stamping strip steel. The prime motive is to restore the zeal and pride of workmanship to the modern machine worker and to emphasize his rewards in self-respect, satisfaction and recognition.

Through the use of chemistry, the microscope, spectroscope, X-ray, and elaborate testing machines, we study, analyze and compare these early products with our modern products. We find that all the so-called "lost arts" are known to us save two: the mediaeval Japanese cementation process of hardening sword blades—curiosity is our only interest in this—and art herself, which we are about to recapture.

This museum is connected by several stairways and an elevator with the offices and the shops of the Worcester Pressed Steel Company where the current steel products are designed and made. These buildings comprise the active part of the exhibition and are as open to the visitors as the museum



THE JOHN WOODMAN HIGGINS MUSEUM, MODERN WING

galleries are open to the shop workers. That people are interested in such technicalities is demonstrated by the attendance count of 18,000 visitors since the museum was opened last year, and this does not include any holiday, Sunday or concert crowds. The doors are open free to the public from 7:00 a.m. to 6:00 p.m. daily except Sundays and holidays.

The Future of Art-alloyed Steel

With processes, equipment and alloys unknown to our predecessors, the fields of opportunity stretch further ahead than the paths of history behind. Our mills produce successive lots of steel which the metallurgical chemists pronounce identical. But for some time in our new high-speed, self-feeding, double-action presses, one lot failed while another succeeded. This puzzled us until this year—the spectrograph offered a solution. The light from an electric arc, formed between two specimens of the steel, is divided by a prism, and a photograph of this spectrum registers to the millionth part the quantity of each of the ninety-three different elements present. Now we may know why one lot failed while another succeeded, and also how the steel mills can meet our new specifications.

No wonder we steel workers acknowledge steel to be man's medium *par excellence*. Its strength, endurance, abundance and adaptability, its beauty of texture and tone, surpass all other metals for man's supreme expression—Art in Industry. With different alloys grades of steel are produced suited to each and every particular purpose. And now at last we are beginning to appreciate the value of nature's richest gift to man, after fire, water, and soil—the romance and the challenge of steel.

"*What cannot art and industry perform,*
When science plans the progress
of their toil?"

GOVERNMENT AND BUSINESS

By JULIUS H. BARNES

The Need of an Economic Council

SOME time before the shadows of the present business depression began to gather, a number of European countries, confronted with grave problems of commercial and industrial adjustment cast up by the backwash of war, resorted to the expedient of setting up economic councils or commissions to which government might turn for advice. Germany had its Reichswirtschaftsrat. The Labour Government of Great Britain appointed a National Economic Committee. France, Spain, Jugoslavia and other countries created similar bodies. George Bernard Shaw, before the Fabian Society, went to the extreme of proposing the establishment of a separate industrial parliament to deal with national economic questions, a suggestion recently paralleled by that of the Danish Premier who advocated the abolition of the upper house of Parliament and the substitution of an advisory body to consider economic problems. The same idea is clothed in the language of prophecy by John Maynard Keynes in his *Essays in Persuasion:*

> I believe that in the future Government will have to take on many duties which it has avoided in the past. For these purposes Ministers and Parliament will be unserviceable. Our task must be to decentralize and devolve wherever we can, and in particular to establish semi-independent corporations and organs of administration to which duties of government, new and old, will be entrusted—without, however, impairing the democratic principle or the ultimate sovereignty of Parliament.

Whether the devices already tried have served the purposes for which they were intended, they at least reflect a widespread notion that some sort of representative body familiar with the ways of business is needed to supplement existing political machinery. The idea of a "planned" national economy has been gaining ground. Under the impetus of a growing liberalism and an insistent social-democracy, government has set out to play a more important rôle than before in shaping national economic policy. The area of its supervision over business activity has steadily expanded, and it has undertaken to deal with many problems of manufacture and distribution which, up to the close of the Victorian era, had been left to private initiative.

Can Political Government Undertake the Task?

The additional burdens which this expansion imposed rested heavily upon those charged with the operation of an administrative political mechanism which was not designed to serve so special a purpose. Cabinets and parliaments, although they might have been theoretically both omnipotent and omniscient, were not constituted to deal with intricate problems of rationalization, production and marketing, much less to lay out a plan of industrial operation on a national scale. They might have been made up predominantly of lawyers, men of letters, career politicians and others who, however astute, were easily lost in the

mazes of industry and trade. The basis of political or governmental representation, especially in the case of democracies, was *territorial*, not *functional*, and government was proceeding further into the field of functional regulation and control.

To meet this situation some European countries are taking a leaf out of the book of the Russian soviets. Having thrown all the old political traditions overboard, the Communist Government has made no pretense of relying upon democratic territorial representation. As a militantly revolutionary organization it recognizes only those groups which will further its ends, in accordance with the Marxian theory that government is a committee or dictatorship of the ruling class, and the spokesmen of this are the soviets or councils—of soldiers, sailors, factory workers and others—who alone have a voice in shaping national policy.

Governmental councils or commissions represent an attempt to reconcile two different, if not conflicting, theories of public administration and reflect the need, under present conditions, of some kind of special machinery to supplement the traditional democratic system. The United States has perhaps stuck more closely to the democratic road, but it has not escaped the perplexities arising out of the development of more cohesive and more aggressive functional groups. "Bloc" legislation is probably a phase of this development. The setting up of executive departments which are promotional rather than constitutively governmental—Agriculture, Commerce and Labor—and the creation of administrative bureaus and commissions represent attempts to adapt a political mechanism to a functional purpose. A Federal Farm Board has been clothed with a measure of authority to shape national agrarian policy and to supervise a system of marketing agricultural products. It is now proposed to set up a national economic council to chart a course for business.

Apparently the United States, as well as other countries, is approaching, if it has not already arrived at, the parting of the ways. It is confronted with the choice of keeping government within prescribed political limits, as it was constituted, or of grafting upon the political stem a system of functional administration which it was not designed to sustain. Conditions that have given rise to the dilemma cannot be ignored. Business is afforded scant hope of continuing to be regarded merely as a personal vocation, or the pursuit of an individual for a living, as it was when industry was little more than a household art and its products seldom went beyond the radius of a restricted neighborhood. Its ramifications are nation-wide, if not world-wide, and affect for better or worse the well-being of many thousands. Its public responsibilities have increased in proportion and it is confronted with the alternative of discharging them voluntarily or being compelled to do so by law.

The latter course has led to results too questionable to encourage advances in that direction. To saddle government with the duty of supervising a functional activity like business would probably be, in the long run, disastrous to both. "Our Government," Chief Justice Hughes has said, "is the most successful contrivance the world has ever known for preventing things from being done." On the other hand, the doing of them has lifted the level of government expenditure to disconcert-

ingly high levels. Economics and politics do not mix. If one is at fault for stressing too much the importance of income and profit, the other is equally at fault for ignoring them. Some way must be found of reconciling business and government without destroying or impairing either, and that seems to lie in the direction of a voluntary alliance rather than in a forcible union which would make for the peace of mind of neither.

The Organization of the Chamber of Commerce

This problem was probably in the mind of President Taft when he suggested the creation of a "central agency of American business" to establish "immediate relations between government activities and the commercial forces of our country." In accordance with his suggestion the Chamber of Commerce of the United States was organized in 1912. It was not the first association of its kind. A National Board of Trade had a somewhat ephemeral existence as far back as the "sixties," but the National Chamber may be regarded as the first deliberate attempt to meet the "functional" responsibilities of business without overburdening government with an activity for which it was not suited and which was alien to the purposes for which it was created.

As defined by its own constitution, the purpose of the National Chamber is "to secure cooperative action in advancing the common purposes of its members, uniformity and equity in business usages and laws, and proper consideration and concentration of opinion upon questions affecting the financial, commercial, civic and industrial interests of the country at large." Its constituent membership consists of local and regional commercial organizations, of which there are now approximately 1,300, and trade associations representing various branches of business activity; of the latter there are now approximately 500.

To bring opinion from such widely scattered and diverse sources to bear upon common economic problems is no small task, but it has been accomplished probably as successfully as, and with greater despatch than, the focusing of public opinion through the machinery of politics upon questions of national polity. Frequently the members of a given industry cannot be brought eye to eye in viewing their common problems, and the diversity of interest is even greater when exporters are brought together with importers, when chain distributors meet with independent distributors, when the producer of raw materials sits face to face with the manufacturer. But it is a common error to overemphasize points of disagreement rather than points of agreement, and in contemplating what has not been done to overlook what has been done. The most striking thing about this experiment in functional administration is not that it has left so much undone but that, under the circumstances, it has done so much.

There are two ways in which the Chamber arrives at its conclusions. One is by discussions at the annual meeting, which lead to the formulation of resolutions. The other is by referendum vote of the constituent membership. In the latter case the questions to be passed upon are presented in the form of recommendations made by a special or standing committee which, after study of the problem under consideration, proposes a course of action. Sometimes the preliminary ground is covered by a conference, representa-

tive of all the business interests directly concerned, which reconciles points of difference and reaches a consensus which is submitted to the Chamber membership for approval. There are, normally, more than a score of committees, with an aggregate membership of approximately three hundred business executives, economists and others, who keep under more or less continuous scrutiny developments in the various fields of business activity. In its twenty years of existence the Chamber has held sixty referenda relating to questions of national economic policy.

The Chamber of Commerce and Major Business Policies

The subjects upon which judgment has been passed in one or the other of these two ways, by resolution or referendum, are too numerous to be reviewed in small compass. Neither is there any yardstick by which the effects of Chamber initiative can be accurately measured. To attempt to trace national economic policy back through the mazes of public contention and debate to its original source is probably both futile and profitless. But some idea of the rôle the organization has played in bringing business opinion to bear upon questions of this sort, and in shaping business and governmental policy, may be indicated by reference to some of the typical problems with which, at one time or another, it has dealt.

Federal Budget System.—The first referendum submitted by the Chamber to its members formulated proposals for the establishment of a national budget system. It was approved in 1913. From that time up to 1921 the Chamber has voiced its advocacy of the budget system in a resolution adopted at each annual meeting, and the Budget Act, when it was finally passed by Congress, followed in general lines the recommendations of the Chamber.

Since the passage of the Budget Act, the Chamber has refrained from recommending to Congress appropriations not included in the estimates of the Bureau of the Budget and it has lent its efforts to making the budget a clear and intelligible picture of governmental fiscal activities. Of the part it has played, General H. M. Lord, Director of the Budget, said: "There is only one organization that I know of that has consistently and regularly supported the Bureau of the Budget in its effort to carry out the administrative policies of economy of the President, and that is the United States Chamber of Commerce."

The National Banking System.—Throughout the twenty years of its existence the Chamber has given continuous attention to the improvement of the banking system of the country. In the first resolution adopted at the first annual meeting in January, 1913, it recommended the remodeling of the banking facilities and the creation of a federal reserve system. The subject had been under consideration since the appointment of the National Monetary Commission, but the Owen-Glass Currency Bill, which later evolved into the Federal Reserve Act, was not introduced until June, 1913. A few days later a Chamber committee met in conference with Secretary of State Bryan, Representative Glass and Senator Owen and recommended certain changes in the proposed measure. These were submitted by referendum to the Chamber membership and approved; when the Act was passed in December, it embodied practically all the recommendations of the Chamber.

In 1925, further recommendations were formulated in Referendum 45. These were paralleled in the McFadden-Pepper Act, which provided for branch banking by national banks in states which permit state banks to operate branches, provided for indeterminate charters for Federal Reserve banks, and authorized certain activities on the part of national banks. Through its Finance Department and Banking Committees the Chamber affords a point of contact between the Federal Reserve Board and the Treasury Department on the one hand and business organizations on the other, facilitating the exchange of views and information on banking in relation to trade and industry.

Taxation.—Taxation is of necessity a matter mainly of political policy, but its importance from an economic viewpoint is obvious. The subject is one that has been kept under continuous scrutiny by the National Chamber, which has formulated, both by resolution and by referenda, recommendations looking to the reduction of disturbing economic effects of taxation to a minimum consistent with adequate revenue and the improvement of revenue administration. The suggestions which it has made are too numerous to be listed here. Of the proposals it has supported, most of which have been favorably acted upon by Congress, the following are typical:

Abolition of the capital-stock tax.

Reduction of the corporation-income tax to correspond more closely with the normal individual rate.

Abolition of the gift tax.

Application of lower rate to earned income.

Elimination of international double taxation; reciprocity bills to this end are now before Congress.

Payment of income taxes in quarterly installments.

Repeal of publicity provisions of income-tax law.

Establishment of a court of tax appeals independent of the Treasury Department; the Board of Tax Appeals was created.

Repeal of the federal estate tax. The estate tax has not been repealed but the rates have been halved, and 80% credit has been allowed for inheritance taxes paid to the states.

The National Chamber has made numerous recommendations for the improvement and simplification of revenue-law administration and for the abolition of vexatious and burdensome complications and delays. It has consistently urged the greater coordination of federal and state taxation systems. For the guidance of member organizations it has also dealt with problems of state and local budgeting and expenditure in the solution of which there has been appreciable progress.

Transportation.—Efforts to break down the principle of private ownership and private operation of the railroads have been steadfastly opposed by the National Chamber. Even before the conclusion of the World War, the Board of Directors authorized the organization of a National Transportation Conference to consider the return of the railroads to private ownership. Six sessions of the conference were held during the period from December, 1918, to June, 1919, and they were attended by representatives of every important industry affected by transportation —commerce, industry, agriculture, railroad management and railroad employees. Out of the discussion emerged a "Program of Remedial Railroad Legislation" which was approved by the Chamber membership in Referendum 28. The substance of this program, with modifications and additions re-

sulting from discussions with committees of Congress, was enacted into law as the Transportation Act of 1920.

In 1923 and 1924, when the tide of government ownership of railroads appeared to be rising, a similar conference made a reappraisal of the Transportation Act and brought to light the facts regarding the transportation situation. The steadying effect of this conference was apparent, although it could not be precisely measured, and it anticipated developments which have since occupied public attention.

A merchant marine conference, similarly conducted, undoubtedly contributed to the restoration of shipping to private operation and the transfer of government lines to private ownership.

In dealing with inland water transportation the Chamber has persistently urged that new projects be based upon comprehensive surveys in order that priority might be given to those projects which are essential to the development of a general plan of waterway development. This policy is now being generally observed in federal legislation on this subject.

Tariff.—In dealing with the tariff the Chamber has kept clear of the question of rates and has confined its proposals to matters of principle and administration, with a view to reducing to a minimum the disturbing effects of tariff revision. In its second referendum in 1913, it proposed the establishment of a permanent tariff commission. This idea was reiterated in subsequent resolutions. The Commission was established by the act of 1916. The Chamber also pioneered as sponsor of the principle of flexibility which was incorporated in the act of 1922.

Water-power Policy.—In 1918, the Chamber in Referendum 24 formulated certain recommendations regarding water-power supervision and development which were substantially incorporated in the Federal Water Power Act of 1920. Later it appointed a special committee to consider at longer range the question of national water-power policy. After nearly two years' study of the subject, the committee formulated its conclusions which, in the main, upheld the principle that water-power regulation and control should remain with the states, that the development and distribution of power is within the proper sphere of private enterprise, and that the Federal Government should leave the transmission and distribution of power to other agencies. It specifically recommended that the Muscle Shoals power plant be leased or sold "as is." These conclusions were approved by the Chamber membership in Referendum 57. What part they will play in giving direction to federal and state effort in dealing with the highly controversial public-utility problem is yet to be determined, but they at least provide a definite starting point for formulating a permanent water-power policy.

Similar activities have been effectively carried on in many other fields—agriculture, insurance, industrial relations, distribution, and natural resources. In some instances these activities have led to the recommendation of specific courses of action by government; in others the purpose has been to chart a general course for the guidance of business alone. In all of them there is discernible, at least in broad outline, a tendency to substitute collective planning for scattered individual effort, to marshal the resources of business in the solution of given economic problems, and to agree upon programs which will meet

the requirements of national economic policy.

The twenty years during which the Chamber has been in existence—a relatively short period in the development of so far-reaching an enterprise—have constituted an interesting and significant experiment in business planning. This experiment has been confined, for the most part, to a limited range. The Chamber has dealt largely with problems immediately confronting business and has held rather consistently to an empirical course, although at times it has approached economic questions in the longer range of permanent policy, as exemplified by its advocacy of tariff flexibility, national water-power policy and conservation of natural resources.

The War Activities of the Chamber of Commerce

That it could operate effectively in the coordination of industrial activities, which is essential to the execution of any kind of planning, there is not much doubt. The possibilities in this direction are indicated by the part the Chamber played in mobilizing the business resources of the country during the World War. The first call came from the Secretary of War, who asked that local business committees be appointed to cooperate with district quartermasters of the Army in procuring military supplies. In September, 1917, the Chamber held its War Convention, which led to the substitution of Chamber committees for the Government committees of industry of the Council of National Defense. By the time the armistice was signed, there were more than 400 war-service committees of the Chamber functioning under the direction of its War Service Executive Committee.

Of the work of these committees the Chairman of the War Industries Board, Bernard Baruch, said:

> Of indispensable value in facilitating contact between the various sections and the branches of industry corresponding to them, was the series of war service committees, originally under the Council of National Defense and later transferred to the supervision of the United States Chamber of Commerce, each representing one line of business. A War Service Committee spoke and acted as agent and representative of an industry and not as an agent of the Board. The various units composing a particular industry would join in appointing one of these committees to act as spokesman in negotiating with the Government. The strongest men in industry usually served on these committees.
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> The War Service Committees were constant sources of information regarding the sentiments of the trades, their complaints and their suggestions. Whenever a section felt the approach of a critical situation, something involving unusual treatment, a conference of the representatives of all firms to be affected would be called together; views would be exchanged; the importance of the Government's requirements would be carefully explained; and suggestions for the solution of the problems would be received and discussed at length. Working agreements were often reached at these conferences, agreements regarding priorities, agreements as to the form and handling of a licensing system of distribution, agreements as to price fixing and other methods of control. The results of these conferences would be taken before the appropriate functional division where the plans would be ratified and directions for putting them into effect issued to the section and to the trade.

Obviously the War supplied a compelling motive which made for the success of this plan of operation and which is lacking under ordinary conditions. The Government moreover had the authority to make the decisions effective. But it is not inconceivable that the pressure of economic adversity,

or the threat of it, would bring about sufficient cohesiveness in the various industrial groups to make effective planning possible. Business displayed its capacity in the direction of functional activities to meet the requirements of government in time of war, probably a greater capacity than might have been achieved had the initiative been supplied by government alone. It may also be observed that when the need for the 400 war-service committees had passed, they were dissolved, a happy eventuality much less likely to occur when functional administrative machinery is meshed in the gears of permanent political government.

The Chamber of Commerce and Economic Planning

The progress of voluntary functional control exemplified by the National Chamber has been evolutionary, not revolutionary. The organization has not attempted to formulate a comprehensive national economic program; nor is such a program consistent with the ideas, to which it has steadfastly held, that the initial impetus which gives rise to economic advancement is supplied by the initiative of the individual, and that to smother it in a blanket of governmental supervision, direction and competition would be nothing less than disastrous. In large perspective the Chamber's policy has been to chart a course, for the individual, which will best enable him, in the industry in which he is engaged and in the business group which performs an essential public service, to serve public ends and to meet the public responsibilities which he shares with others. The Chamber has attempted to meet problems as they have arisen, not to lay out in advance a large-scale plan of industrial production and distribution to which business shall be made to conform.

In December, 1931, the Chamber submitted to its membership by referendum the report of its Special Committee on Continuity of Business and Employment. This report recommended, among other things, the creation of a national economic council. "The Council," the committee said in its report, "should be an advisory body, as its name implies, rather than an executive board with functions like those of the War Industries Board. The present depression is compelling evidence that our country is confronted with economic problems of the gravest importance. As yet there is not united or settled opinion as to how these problems should be met. An advisory council in dealing with them could perform a great national service, provided that it be so constituted that it would command respect by reason of the ability, integrity, and impartiality of its members." The members, the Committee added, "should be representative of the country as a whole and not of any particular constituency, and they must be so appointed that they will be entirely beyond suspicion of control by any group."

So constituted, the proposed Council would not encroach upon the functional autonomy of business nor project government further into the field of functional administration. It would have none of the authority of a general staff arbitrarily to direct business operations. It would, rather, serve the purpose of a general board of strategy which would point out how diverse efforts could be coordinated and directed to the single end of keeping production and consumption in balance and maintaining the orderly march of economic progress.

There is not much doubt that the need of more effective direction and control of the national economy to escape the devastating effects of depression is generally recognized. There is much less unanimity of opinion as to how this shall be accomplished. The wisdom of committing the task to government, which is rapidly outgrowing the dimensions of an effective administrative machine and which of necessity moves with deliberate slowness in a world of rapid economic change, may be questioned. The disruptive effects of substituting compulsory collective political management for individual enterprise cannot be overestimated. Experience has yet to demonstrate convincingly the success of a single attempt in this direction.

On the other hand, whether or not the sense of functional responsibility on the part of the individuals composing particular groups is lively enough to assure adequate observance of the obligations which such group organization imposes, may also be reasonably questioned. It is a slow growth from within and cannot be brought to full stature overnight by the expedient of a governmental statute or a regulative political order, even if such a course were consistent with democratic ideals.

Yet it is quite possible that much of our impatience arises out of the fact that public attention, especially in a time of stress like the present, is fixed upon what has not been accomplished rather than upon what has been accomplished. The Chamber of Commerce of the United States has in its twenty years of existence done much, even if there is more that it has not done. Like all federations, its strength is in great degree measured by the strength of its constituent membership, and the development of efficient trade associations and commercial organizations is essential to the further development of functional direction in the advancement of national economic policy. But it has laid a broad and secure base to build upon and it has demonstrated that a certain measure of functional control is feasible without the disturbing intervention of government. It would appear to be the part of wisdom to develop this method rather than to launch business upon the stormy sea of political supervision.

SELF-REGULATION AND THE LAW

By EDGAR L. HEERMANCE

IN relation to business, American law and its administration serve three main purposes: to keep competition alive, to reenforce voluntary regulation,and to protect the public where self-regulation has failed.

The United States is one of the few countries that has continued to hold full allegiance to the competitive system. Or, to put it in another way, we have yielded less to the world-wide swing toward paternalism. The Sherman Act, which is the bulwark of "compulsory competition," embodies certain venerable provisions of the common law regarding restraint of trade. Designed primarily to guard the public against oppressive monopolies, it did so by keeping competition open to all companies wishing to enter the market. That has been the intent and the effect of Supreme Court decisions.

The restraint on combination acted at the same time as a brake on the new trade-association movement. Free competition has its drawbacks. Unless kept under some sort of control, it often proves suicidal to its participants and of no permanent benefit to the public at large. This situation was not contemplated by the framers of the Sherman Law or by its early judicial interpreters. Nor did they foresee the shift from individual to group action, the fact that the efforts to make competition workable would be made by organizations of competitors.

Control by the Trade Association

Modern business is highly specialized. The roster of American trade associations reads like an encyclopaedia of commerce; it begins with abrasive paper and ends with zinc. Each group is more or less distinct. The members of an industry, or of closely related industries, face similar problems, and integration has followed the line of common interest. This organization movement was well under way by the time of the World War, which gave it added impetus. Mr. Hoover, as Secretary of Commerce, brought to it the active support of his Department. Today there are probably 2,000 trade associations of national scope. They naturally vary in strength and effectiveness. My own impression would be that three-quarters of them are of little practical value to their membership. Not more than 50 of the 2,000 could be classed as really efficient. But the widespread change from individualism to cooperative effort has been one of the striking features in American business life.

The basis of trade organization is mutual aid. The more active associations have developed such joint activities as legislative and traffic bureaus, credit interchange, the gathering of trade statistics, and education in cost finding. They have played an important part in the movement for standardization and simplification. The trade convention often develops into a school of methods. A good deal has been done along the lines of industrial research and joint trade promotion. The post-war period has seen a steady improvement in organization technique and in the amount and quality of the service rendered. A recent tendency

has been to reorganize as an Institute, which might be described as a trade association that takes itself seriously and makes large use of a trained business staff.

A strong organization of competitors, working for the protection and improvement of their common business, supplies a basis for social control. Conditions within the industry are no longer anarchic. Competition is carried on in a different atmosphere. As the members learn to know one another, the old hostility and suspicion melt away. They begin to share experiences and exchange business courtesies. Common effort tends to bring out a sense of the industry as a whole. The companies learn to know their costs and to use market reports in planning production. Every such improvement in business methods is a flank attack on unfair and uneconomic practice. In the course of time, as in the mediaeval guilds, trade customs crystallize into an unwritten code. Public opinion within the group helps to hold the membership in line. Social pressure is less effective in the large group or where surplus capacity is excessive or where considerable outside competition must be reckoned with. Each industry is made up in part of an organized body, and in part of an unorganized fringe over which the trade association has little control.

Few trade associations have developed to the point where they can take direct action against trade abuses. The written code is a case in point. During the post-war slump, the intense competition for business made unfair practice more common and more serious. Professional codes of ethics suggested an effective method of attack on such practices. Business leaders did not realize that the value of the professional code is not in the document, but in the slow development of an unwritten code that lies behind it. Code-writing spread rapidly, largely by imitation, and became more stereotyped in the process. Between 1921 and 1928, probably 400 national associations made the gesture of adopting written standards of practice. The effect on business ethics, however, was practically nil. Trade abuses are not corrected by *fiat*. Many of the codes were idealistic statements in general terms. Where they were specific, there were no adequate sanctions except those which the industry's unwritten code already supplied.

If an organized industry is in a position to legislate for itself in matters of trade practice—and a number of them have reached that stage—some machinery must be provided for enforcing the rules. Two examples may be cited to show the possibilities of voluntary control. They illustrate the type of mechanism and the high degree of social solidarity which are necessary for effective self-government in business. In discussions of the Swope plan for stabilizing an industry through the trade association, these conditions are often overlooked. The responsibility of the individual to the group, on which all government depends, is a matter of slow growth.

As a first example, the organization of paint manufacturers may be cited. It has represented the stronger companies in a somewhat widely diffused industry. In 1898, after several years of association, they were able to correct the abuse of taking in exchange the stocks of another manufacturer on the dealer's shelves. This was done through the Nonexchange Agreement, which was made a condition of membership. It was not until 1917, however,

that the group was ready to attack the prevalent evil of commercial bribery. A rigid Antirebate Agreement was signed. The association joined with the varnish manufacturers in setting up at Washington their own Unfair Competition Bureau. The Bureau has functioned as the focal point for self-regulation throughout the industry. It concerns itself not only with bribery, which has been practically eliminated so far as the organized section of the industry is concerned, but also with adulteration, misrepresentation and other forms of unfair practice. Complaints and charges are carefully investigated and settled where possible through the parties involved. This applies to members and nonmembers alike. Expulsion from membership or legal prosecution is kept as a last resort.

The meat-packing industry supplies another good example of self-regulation. The large amount of capital required results in fewer competing units. Membership in the American Institute of Meat Packers has been substantially inclusive. After a ten-year record of constructive service, the Institute adopted in 1929 a brief code of practice covering various phases of unfair competition. Complaints and answers are handled through the president. Where necessary, cases are sent to the regional chairman, and provision is made for a series of courts of appeal, ranging from the divisional committee to the Secretary of Agriculture. The machinery appears to be adequate for its purpose. If unfair competition arises, there is a way to take care of it. In the first year and a half, a total of 15 formal complaints were filed, of which 7 were settled by the parties to the complaint. During the same period, the Committee of Interpretation and Appeal considered 56 requests for interpretation of the code.

Group Action and the Law

How far could the trade associations go without violating the antitrust laws? Since the World War, business men have constantly been confronted by this question, which at times has been acute. The reluctance of the Department of Justice and the Supreme Court to approve joint activities has been due in part to the untrustworthiness of organized business groups. In the 1921 Hardwood Case, the association was trying to accomplish something which was desirable from every point of view; that is, stabilize the lumber market and prevent wasteful overproduction. But they took an illegal and, from the traditional American standpoint, a socially dangerous method. What the court condemned was concerted action, under the direction of the secretary, to cut down production and increase price. The "meeting of minds" in a trade association is liable at any time to take that form.

The past decade has seen two lines of progress. The first is the broadening of the law. There is still a border zone, as always will be the case in a developing, as contrasted with a static, society. But the Federal courts have come to recognize not only the new cooperative competition but also the economic value of such activities as the exchange of statistics on production, cost, and prices in actual sales. As Justice Stone said in the Maple Flooring Case, "Competition does not become less free merely because the conduct of commercial operations becomes more intelligent through the free distribution of knowledge of all the essential factors entering into the commercial transaction."

The second line of advance is that the more efficient trade associations have learned to live within the present law, and without feeling it any special impediment to common action. They realize that production and price agreements could not be made to work in practice. Except in special cases, where there is a virtual monopoly, such attempts have been more or less of a failure both here and abroad. The competition of outside firms tends to break down the best-laid plans for curtailing production. The companies which have signed the agreement cannot be held in line. Economic stabilization must be reached by the slower method of developing business facts and educating the membership in their proper use. Compulsory competition has its drawbacks; it may require modification in such industries as coal mining and oil. In general, however, it has not proved incompatible with voluntary regulation.

The Legal Reenforcement of Voluntary Regulation

As organized business becomes more expert in self-government, it is reasonable to expect that public regulation will improve in quality. The reenforcing function of law will be more clearly recognized. The trade-association movement, in its efforts to avoid the evils of excessive competition, may be said to ask two things of government. The first is that its own solution of competitive problems, as worked out by experience, shall be recognized by the courts, if not contrary to the public interest. That is, business claims the right, within reasonable limits, to develop business law to meet its needs. The second demand is support from government in bringing within the scope of business law, as thus developed, those competitors whom the trade association cannot reach through its own education and discipline. That is exactly what the relations have been in food and drugs and other forms of legal standardization. It is the way in which the Law Merchant originally came into being. The requirements of the situation are twofold: on the part of organized business, the freedom to define situations, to create standards of practice and enforce them as far as can be done by the pressure of public opinion in the industry; on the part of government, approval of these voluntary standards of practice, when in the public interest, and such further enforcement as a public agency may provide to insure fair competition. That, I believe, states fairly well the ideal toward which the stronger trade associations have been working.

The Federal Trade Commission

The Federal legislation of 1914 was a recognition that unfair methods of competition are destructive of competition. This legislation set up a special agency, the Federal Trade Commission, to prevent the types of practice in interstate commerce out of which restraint of trade was likely to arise. For many of these unfair methods of competition there was no remedy under the Sherman Act or in the common law. An administrative tribunal, authorized to use summary procedure and determine the facts in any given case, would offer a needed protection to legitimate business.

The Commission, due to the constant changes in personnel, has had a somewhat checkered history. For the first five years, aggrieved competitors were free to register complaints, which were rather thoroughly investigated. The

Commission's "cease and desist" orders, when upheld by the courts, did something to define unfair competition in its various forms. But business was inclined to regard it as another persecuting agency like the Department of Justice.

In 1919, the Federal Trade Commission started the plan of taking the industry into consultation. The first regular case of this sort was that of the creamery butter manufacturers of the Mississippi Valley. The number of complaints received, of a similar character, made it desirable to learn how widespread were the practices complained of. As stated by Commissioner Colver, the conference was "for the purpose of gathering the best judgment of the representative members of the industry as to whether certain practices were fair or unfair and were in or against the public interest. It was understood that the judgment of the industry, as expressed, should be for the guidance of the Commission and should be regarded a *prima facie* law merchant for this industry." Those present, after full discussion, drew up a statement of unfair trade practices from which they agreed to refrain.

Here was a proffered reenforcement of self-regulation, an arrangement between government and business very like the ideal stated above. As time went on and the new method of the Commission became better-known, the trade associations made increasing use of it. Beginning with a yearly average of two or three industries, the number increased to 16 a year after 1926, when a special Division of Trade Practice Conferences was established by the Commission. By July 1, 1929, a total of 68 conferences had been held. The movement then assumed mass proportions, reaching 128 before the method broke down temporarily in the middle of 1930.

In a sense, the trade-practice conference was premature. It was in advance of both business and the law. The courts, by which the Commission's orders were reviewed, were not sufficiently in touch with recent business conditions to appreciate an industry's definitions of unfair practice. Trade groups had not realized that the value of the conference rules would be in proportion to their own effort. They were inclined to regard them as a panacea for the evils of excessive competition. The code-writing movement, already mentioned and which followed the previous depression, may be viewed as a rather close parallel.

Control of trade practice by an organized industry requires that the degree of overcapacity be moderate rather than excessive and it presupposes a long experience in working together. In many of these 128 conferences, the rules adopted were counsels of perfection which no one took very seriously. In other cases, the industry attempted to agree on a code of practice by which all the members should be bound, and elaborate machinery was set up for handling complaints of violation. But no grist came to the mill. The members, in their desperate need for business, gradually slipped back into the old ways. The idea that any prevailing form of unfair practice can be eliminated, if all the companies will stop it together, is a beautiful theory which does not work out in practice. Some of the more ambitious attempts, like those of the plumbing-supply and paperboard industries, have already been abandoned.

To those industries which had made definite progress in self-regulation, the trade-practice conference offered cer-

tain distinct advantages. By combining the collective advice of the trade with the administrative method of law-making, legal standards of fair competition could be made definite enough to check the spread of misrepresentation and misbranding, as in rebuilt typewriters, or gold-rolled plate, or furniture, or furs. The representative nature of the conferences, as well as the semiofficial character of the rules adopted, gave them in any case a standing which action by the trade association alone would not have had. And the fact that specific standards had been endorsed by a government agency was an assurance that action along those lines was not illegal. This was an important point. Uncertainty as to the law and the frequent summonses and prosecutions had made business men nervous as to any common action. Many trade-practice rules were put in much the same position as recommendations for simplified practice. They could not be enforced by any Federal bureau. Undue pressure must not be exerted, as the motion-picture producers discovered in the matter of standard contracts. But the Commission's approval left the trade association free to do what it could through organization and education.

As to the Federal enforcement feature, too many business groups came to regard it as a remedy for all their ills. They failed to realize that government can help only those who help themselves. The police work of the Trade Commission was necessarily limited. Its power to take action against a competitor who was seriously disturbing the industry was valuable, chiefly as an occasional example or a continuous threat. Usually, when the Commission did act, it was after such a long delay that the order lost a good deal of its effect. This was true even with 128 trade-practice conferences to look after. To expand the Commission into a police agency for 2,000 industries is hardly conceivable. Except for clear cases of law violation, the threat of action by the Federal Trade Commission has weight only so long as it is generally believed. When aggressive competitors realize that most of the violations of trade-conference rules could not at present be proved in court, the bogie of possible prosecution is laid. It no longer terrifies or deters. Another weakness of this exaggerated emphasis on enforcement, which many business men were keen enough to recognize, lay in the fact that the companies which lived up to the new rules would be handicapped by the competition of firms which did not. In other words, until an industry achieves substantial unanimity in practice, it has not reached the stage of self-regulation where it can appeal to government for help against the disturbing elements on the fringe.

Cooperation or Law Enforcement?

The Federal Trade Commission has suffered from the lack of any clear and consistent view of its functions. In dealing with business, it seems to have vibrated between a policy of constructive cooperation and one of narrow law-enforcement. In 1925, trade-practice rules began to be divided into Groups I and II. The ostensible reason was that the first covered violations of existing law of which the Commission would take cognizance, and the second were merely received as expressions of the trade. The distinction was often illogical and far-fetched. And the Group II rules, which were not illegal in themselves, were designed to cover

those unfair methods of competition in industry which it was the express duty of the Commission to prevent. Approval by the Federal Trade Commission would not make any rule a rule of law, or protect a business group against prosecution if it engaged in restraint of trade. In 1928, the pendulum swung back. The Commission decided to treat clandestine violation of any trade-practice rules, whether Group I or II, as unfair methods of competition, on the ground that strict observance of good faith in a signed agreement was to the best interest of the trade. This "clandestine rule," however, was rescinded after a few months.

The year 1930 saw violent controversies within the Federal Trade Commission and between the Trade Practice Division and the legal staff. Abandoning the policy of encouraging voluntary legislation by each trade in the industry's own terms, the Commission made a drastic revision of the rules outstanding, in order to bring them into line with existing statute law.

It seemed for a time as if there would be serious reactions from this sudden checking of a movement that had assumed such impressive volume. Self-regulation had been given at least a psychological setback. Indignation among the industries concerned reached fever heat at the Congress of Industries held at Niagara Falls on September 25, 1930. Heavy pressure was brought to bear on the Commission, and the *status quo ante* appears to have been substantially restored. But the rerevision of the rules, issued during the past year, though more liberal in some ways, does not alter the outstanding fact. Trade-practice conferences have lost all spontaneity. Industries are again flocking into the Ark to escape the economic Flood. But the terms of admittance are rigid; the various industries must conform to a standardized phraseology, whether they make lime or lightning rods.

Group I rules are now stated in terms of existing law. Such law involves in large part the antitrust statutes, of which the Federal Trade Commission was never made general custodian. By this arbitrary step, this narrowly legalistic attitude, the Commission tends to become a mere duplicate of the Department of Justice. There always has been a certain lack of teamwork between the two agencies. The Federal Trade Commission had been given the function of preventing unfair methods of competition that might lead to restraint of trade, and the Attorney General's office that of prosecuting actual restraint of trade. This distinction of function was often overlooked. It will be largely wiped out if the Commission ceases to deal with prevention in the broad sense.

The Commission's Proper Function

If the function of the Federal Trade Commission, on the substantive side, is to prevent unfair competition, and on the adjective side to reenforce self-government in business, its contribution, and it is a very real one, might be expected to be as follows: First, the study, through its own staff or other agencies, of basic conditions in an industry, not with a view to ferreting out possible violations of law, but to aid in disclosing the economic handicaps that limit the industry's strength and service. Second, to cooperate with organized industries in the defining of situations and the development of adequate measures of self-regulation; the work of the Commission with the paint and varnish industry and with the periodical publishers shows what

the trade-practice conference may be at its best. Third, to assist industries in broadening the law, by helping them to carry through the courts test cases in the twilight zone, where the business group feels that certain common action is needed and where the law is not yet clear. Fourth, by instituting corrective proceedings, and particularly by the use of the stipulation method, with publicity where necessary, to attempt the elimination of unfair practice in cases where the well-being of an entire industry is involved. By leaving to the Department of Justice the ordinary handling of law violations—the random sniping at petty cases of unfair competition is of doubtful value—the Commission would tend to become an administrative tribunal as it was intended to be, rather than a policeman.

To enable the Federal Trade Commission to fulfill these functions, no change in its organic law, but merely a personnel of high quality and broad viewpoint, is required. The authors of the Trade Commission Act could not have foreseen this development of its activity. They still were thinking of self-regulation, if they thought of it at all, in terms of the individual business. Today we must think of self-regulation, and of the service which the Commission can render, in terms of the business group. The Act needs to be so interpreted. I would again emphasize the change that has come in the last ten years along the line of concerted effort, a change of which the practice conference itself is a symbol.

In the historic Gratz case Justice McReynolds, speaking for the majority of the Supreme Court, defined "unfair methods of competition" as covering practices generally regarded as "opposed to good morals because characterized by deception, bad faith, fraud, or oppression"; or practices which are "against public policy because of their dangerous tendency unduly to hinder competition or create a monopoly." A third and more inclusive category should now be added, to cover practices which are contrary to the public interest because they tend to upset the economic stability of an industry.

A basis for this change is laid in the recent opinion of the Supreme Court in the case of *Federal Trade Commission* v. *Raladam Co.*, decided May 25, 1931. For a practice to constitute an unfair method of competition it must tend injuriously to affect the business of competitors. "By the plain words of the act, the power of the Commission to take steps looking to the issue of an order to desist depends upon the existence of three distinct prerequisites: (1) That the methods complained of are *unfair;* (2) that they are methods of *competition* in commerce; and (3) that a proceeding by the Commission to prevent the use of the methods appears to be in the *interest of the public.*" The scope of the Federal Trade Commission apparently would be to referee the game between competitors, in order to insure fair and socially beneficial competition. All forms of ruthless and destructive trade war could be banned. Though a reference to this ruling has been inserted by the Commission in many of the latest trade-practice conferences, its full implication does not seem to have been grasped.

Prophylactic Law

During the Coolidge administration, the Antitrust Division of the Department of Justice, under the Assistant Attorney General, William J. Donovan, developed the policy of prophylactic law. Industry was invited to submit

plans for combination, whether in the form of mergers or trade associations. No approval was given, but the interested parties were informed if their plans seemed likely to result in violation of law. This service proved of great value to the business world. Prophylactic law was abandoned to a large extent by the new administration. With the change of front on the part of the Federal Trade Commission—there was no connection between the two events—the trade associations were bewildered. Was there no way by which the smaller companies, particularly, in their joint efforts for survival, could experiment with the needed self-regulation, without the danger of being found criminals under the Sherman Law?

The American Bar Association, in August, 1930, approved a suggested revision of the antitrust laws submitted by its Commerce Committee. Under this amendment, the Federal Trade Commission would become primarily a fact-finding body. By-laws, codes, or any other forms of written agreement are treated as contracts in commerce. A corporation or trade association may publish such proposed regulations and submit them to the Federal authorities. If the Attorney General has reason to believe that they will substantially lessen competition or tend to create a monopoly, he shall file a complaint with the Federal Trade Commission. Where the Commission, after hearing the case, decides that restraint of trade would result, it may issue an order requiring the parties to desist from carrying out the contract. On the other hand, where no restraining order is issued by the Commission, or by the courts through which its action may be reviewed, the parties who attempt to put the contract in force are to be immune from criminal prosecution. On application of the Attorney General, the Commission may at any time amend or reverse its decision, if it finds, on further hearing, that there has been a change of circumstances surrounding the contract or performance which makes it a restraint of trade.

This proposed legislation would emphasize what seems to be the proper function of the Commission, without weakening the protection given to the public and to business by the antitrust laws. Organized business groups would be relieved of their present intolerable burden of uncertainty and fear. They would be encouraged to continue their experiments in self-regulation, subject to the expert guidance of a revamped Federal Trade Commission. And it is well to keep in mind that the future of a competitive system depends on the success of such experiments in self-government.

Elbow Room through Adjudication of Cases

No doubt "contracts in commerce" are possible today without such an amendment. To take a concrete case, let us suppose that an industry is suffering loss and demoralization through some uneconomic but prevailing practice, such as free delivery or other form of rebate. Since open rebates are not illegal *per se*, the burden of eradicating the evil rests on the trade concerned. The task is primarily educational, but in time some sanction for group action may be required. The industry may reach the point where a large proportion of its members are able to sign a *bona fide* agreement to abstain from the practice, as was done by the paint group in their Nonexchange Agreement. Whether such a contract could be enforced by injunction or by a

suit for damages will not be known until a test case has been taken into the courts. Another test case would be required to determine whether the irresponsible outsider, who had not signed the contract, could be legally restrained on the ground of unfair competition.

The normal way in which the law grows is through adjudication. As already pointed out, the Federal Trade Commission might be of help now in that direction. One remedy for fear of the law is courage. A trade association, assuming that it went into court with clean hands, that its conscience was clear as to restraint of trade, could remove uncertainty and advance the cause of self-regulation by carrying such a case up to the Supreme Court. The Sugar Institute has done just that. In its attempt to curb the rebating evil through joint action, it was performing a public service in standing by its guns and compelling the Department of Justice to prove it in the wrong. The Cement and Maple Flooring groups, by carrying their cases through, won larger elbow room for themselves and for the entire business world. It is the lack of group courage of this sort which is responsible for the fact that the sum of definitive precedents on concerted action is so distressingly small.

To reach that point, however, most of our trade associations would require stronger leadership than they now possess. And not every organization has the financial resources of the Sugar Institute. If the legal definition of fair and unfair practice, of reasonable and unreasonable restraint of trade, is to keep pace with business needs, it is essential to have an administrative tribunal like the Federal Trade Commission, specializing on trade practice and given ample power to pass on measures of concerted action that may be proposed.

WORLD STOCKS, PRICES AND CONTROLS OF FOODSTUFFS AND RAW MATERIALS

By ROBERT F. MARTIN

DURING the period following the World War, stocks of the major foodstuffs and raw materials on hand throughout the world have been accumulating and have developed into an important economic influence. At the same time, production or trade in many commodities—coffee, copper, cotton, rubber, silk, sugar, tea, tin and wheat—has been subject to some form of semimonopoly control, and prices have been disturbed from their normal alignment in the general price structure.

A short factual survey of these developments delineates the situation more clearly and indicates some important general observations and conclusions.

Coffee

After a post-war coffee-price decline of 60% in 1920, the Federal Government of Brazil in 1921 bought up a large part of the Brazilian crop, these stocks being liquidated over the next few years under the guidance of a bankers' committee in London, with a profit at the end of the transaction of about 40%.

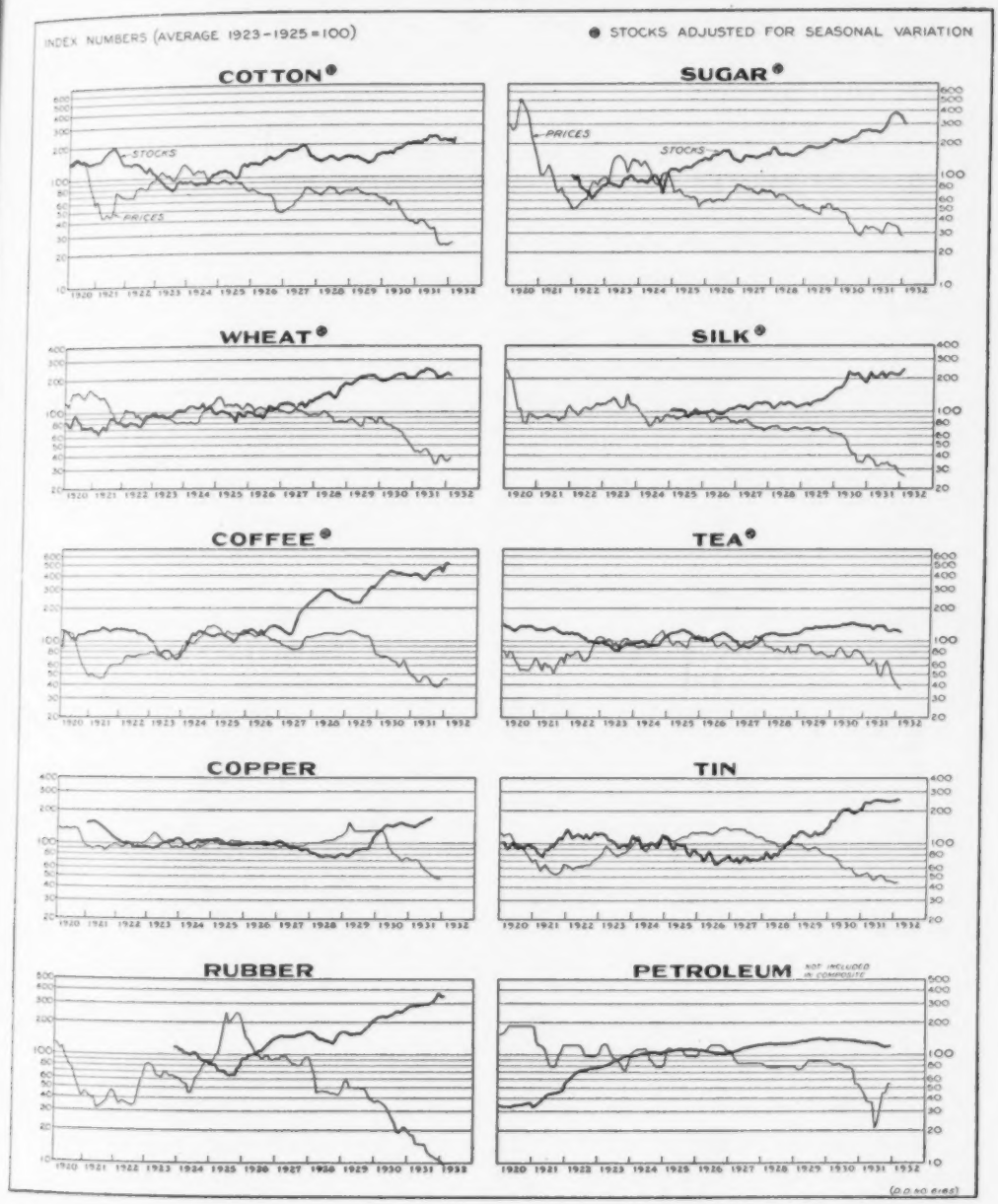
Previous successes in temporary stabilization led to the authorization in the State of Sao Paulo, in 1922, of the Institute for the Permanent Defense of Coffee to take over control operations as soon as the existing Federal Government program should be completed. In November a plan was announced for curtailing and regulating deliveries from interior points to Santos and Rio de Janeiro, and this was the operating device chiefly relied upon throughout the period of the control. Under the guidance of the Federal Government of Brazil, the ports in other states were later brought into this program. From 1922 to 1927 the valorization program worked fairly smoothly. During this time, however, world productive capacity both within and outside Brazil was being rapidly increased.

An exceptionally large crop was harvested in 1927–28. Prices at first declined in response to the general expectation that valorization would break down, but rapidly recovered when, in anticipation of a short crop to follow, the Government was successful in retaining an amount equal to nearly half of the bumper crop at interior warehouses. Thus, stocks rose over 250%, but prices continued high. The anticipated short crop in the following year materialized, and the stocks were being considerably reduced when the harvesting of a new record-breaking coffee crop began, accompanied by general uncertainty in the early stages of the present depression and difficulties in financing the stocks already on hand. Stocks began to increase rapidly and, in spite of the restricted deliveries, prices dropped because of the market uncertainty.

A revolution in 1930 took the valorization scheme out of the sole control of political agents and gave producers of each state some representation. Pro-

posals for the destruction of low-grade coffee stocks were presented in 1931, and by the end of the year almost three million bags had already been destroyed. An agreement was reached to burn a total of about 12 million bags at the rate of not less than one million per month during 1932. Deducting the whole 12 million bags from the estimated total of Braziliant socks of about 38 million at the end of the year, there would still be left on hand some

CHART I



26 million bags (of which possibly 11 million have been financed for release at a rate of about 1½ million per year), as compared with an estimated annual world consumption of Brazilian coffee amounting to 16 million bags.

Copper

The copper production of the world is in the hands of comparatively few producers. Broadly, twenty-four companies control more than 92% of the world's production.

Large stocks accumulated immediately following the War, and nine-tenths of the mines in the United States shut down for a period of 11 months in 1921. In 1922, a Copper Exporters' Association was formed to relieve the domestic supply situation, an accumulation of 200,000 tons, by financing its sale in the export trade. With the rise in industrial activity in 1922 assisting, stocks were soon brought down to a more normal level.

From this time until 1927, stocks and prices showed little variation. In 1925, when it was apparent that stocks had increased, individual holdings in the United States were pooled and bonds were sold to finance gradual release to the expanding market; this was done over a period of about 16 months. In October, 1926, an organization of world producers representing over 90% of world output, Copper Exporters, Inc., was formed under the Webb-Pomerene Act to regulate distribution to European consumers, and incidentally to have an effect on world prices.

Stocks declined steadily, and prices rose, up to the beginning of 1929. High prices brought on greater production and increased stocks, the Copper Exporters, Inc., having pegged the price in the early part of the year. The industrial depression developed in the fall and so curtailed consumption and increased stocks that by April, 1930, it was found impossible to continue to maintain the fixed price. Thereafter, prices declined somewhat in proportion to the increase in stocks, while Copper Exporters, Inc., maintained a "fixed" export price by changing its official quotation 54 times in the 17 subsequent months. Output in 1930 and 1931 was considerably curtailed in the United States, but not to the same degree in other producing countries. Owing to conditions surrounding the operation of the Katanga mines (located in Belgian Congo and controlled by the Belgian Government) it was not possible until the end of 1931 for the 24 copper companies involved to formulate any constructive world-wide curtailment measures.

Cotton

In the case of cotton, except for some important market operations and acreage control by the Egyptian Government relative to the Egyptian crop, no generally important stabilization program was attempted until the establishment of the American Federal Farm Board in the spring of 1929. During this time prices were fairly effective in regulating production. A price decline of about 60% in 1920 led to a 15% cut in 1921 in American acreage (to the lowest point since 1907); at the same time boll-weevil damage was the worst in history, and of course an exceptionally short crop was harvested. Thus, price recovery was facilitated through rapid absorption of the heavy depression stocks.

Again, after a record crop and an increase in stocks in 1926, a decline of about 40% in prices led to a 15% cut in American acreage for 1927, with a

small crop followed by a decline in stocks and a rise in prices.

After the advent of the American "surplus" stocks control in October, 1929, both declining prices and intensive propaganda for voluntary acreage restriction failed to bring about any effort by farmers to curtail production for 1930. After a world price decline of 40% during the year and a more intensive curtailment campaign, acreage was reduced only 10% in 1931, and this reduction proved wholly ineffective because of exceptionally high yields per acre. Stocks continued to accumulate and prices to decline. Farm Board stabilization operations were suspended in June, 1931. An attempt to inaugurate compulsory acreage restriction by the cotton-growing states has received the provisional legislative support of only four states.

Rubber

After some voluntary restriction of rubber production toward the end of the World War, a price decline of about 80% in 1920 led to agitation, by the organized growers, which culminated in the adoption by the British Government of the famous Stevenson restriction scheme. This plan provided for quarterly restriction or expansion of output in British territories in accordance with the variation of the price from a basic 1s.3d. per pound in the previous quarter. Prices rose sharply upon the proposal and early adoption of the scheme in the fall of 1922, but started declining immediately thereafter.

The price decline led to increased restriction, which in turn brought about a drop in stocks of over 40% in 1924 and 1925. The inelastic nature of the program for removing restrictions in response to increased prices accelerated this movement, and prices increased over 500% in this period. Immediate results were varied. The American Government fostered a survey of possible new sources and aided research in the discovery of substitutes. In the private field, the two American companies already interested in crude-rubber production greatly increased their facilities, and others started development outside the British control area. Strenuous efforts were made to develop the use of reclaimed rubber. A considerable contraband trade in rubber "smuggled" out of the restriction area is believed to have developed. Dutch and native plantations in the Netherlands East Indies, which had refused to join the restriction agreement, increased by four or five times the annual extensions of area planted. Immediate results were obtained from the efforts to stimulate the use of reclaimed rubber in America, and within two years this product increased from 23% to 45% of total rubber absorption.

As restrictions were progressively removed under the high prices prevailing, and as consumption became more economical and turned to other sources, stocks on hand began to increase and prices to decline. The fall in prices within a few months at the end of 1925 and in early 1926 amounted to about 50%. In spite of decreasing costs of production, this condition led in April, 1926, to the raising of the basic price level for future restrictions from the existing 1s.3d. to 1s.9d. and to the increasing of some of the quarterly restriction percentages. Even after these changes had occurred, the factors mentioned caused a continued rise in stocks and irregular prices.

By February, 1928, there was a growing realization of the extent to which new plantings, especially native, in the

Dutch East Indies were building up potential competition for the future, and the British Government announced an inquiry which was to serve as a guide for future plans. In a short period prices dropped 50%, anticipating the decision in April that in the coming November all restrictions on export would be abandoned. Perhaps significantly, this announcement came two days before the American Congress was to debate a bill legalizing the operations of buying combinations or trusts in import trade.

A general depression starting in the fall of 1929, which seriously curtailed the rapidly increasing consumption, led to further increase in stocks and declining prices. The Dutch decided to join the British in measures to prevent the situation from becoming worse, and agreed to the cessation of tapping by estates for the month of May, 1930. This measure proved wholly inadequate, and supplies continued to increase and prices to decline up to the end of 1931, when the British and Dutch Governments were negotiating a semiofficial agreement for curtailment of production; on the other hand, the low-cost producers in both areas were now opposed, on the ground that present low prices should be allowed to drive out their high-cost competitors. In March, 1932, the British Foreign Office announced that it had not been found possible to frame any effective scheme for future regulation.

Silk

A rapidly expanding demand for silk after the World War, in spite of increasing rayon production, was sufficient to absorb the increasing output without any appreciable accumulation of stocks.

The general depression starting in the fall of 1929, however, seriously curtailed consumption, and stocks accumulated rapidly while prices correspondingly dropped. The Japanese Government intervened to extend credit so that stocks could be held from the market in the Government warehouses, while the Raw Silk Association secured, from February 1 to May 31, a reduction of one hour per day in working time and the sealing up of 20% of the reeling basins at the mills. Silk spinners likewise curtailed operations. This action checked the rapid growth of available supplies but failed to bring a reduction in volume.

After the price decline of 45% in 1930, there was no great improvement; therefore, the Government brought about a total suspension of mill operations for one month in March and early April, 1931. A slight decline in stocks and a rise in prices resulted, but these were of only temporary duration.

Sugar

In the sugar industry a rapid price decline in 1920 from the high war levels led to the adoption by the Government in Cuba of a compulsory single-selling agency for the 1921 crop,[1] which was terminated at the end of the crop year. Under a similar stimulus of high prices and the protection and subsidies of governments whose war experience had led them to adopt policies favoring self-sufficiency, European beet-sugar countries increased production. Up to 1926 a rapidly increasing world consumption had fairly well taken care of the steady rise in the production of European beet and American tariff-protected areas. In 1926–27 the rise in world consumption was checked. Nevertheless, production in the governmentally favored

[1] See Welch, Charles J., "Sugar—Prince or Pauper?" IV HARVARD BUSINESS REVIEW 2, January, 1931, p. 150.

areas outside Cuba, and in Java with the introduction of a 30% more productive variety of cane, continued to show a steady growth.

The Cuban Government decided upon more drastic control but, in spite of this and skillful management of selling, other factors led to increasing world stocks and declining prices. The owners of the newer low-cost mills in Cuba finally reached the conclusion that, in view of this recent experience, it was probable that the total productive capacity of the industry was greater than required by prospective consumption and that the restrictions were simply keeping the higher-cost mills in competitive production. Attempts continued sporadically, however, on the part of the Cuban Government to control the situation.

Prices in July, 1929, were below the costs of production of most of the non-protected or subsidized parts of the industry, while the remaining parts were making very little profit; sugar consumption was being curtailed by world-wide business depression. All producers were now anxious to have some action taken, and in the latter part of 1930 an International Sugar Conference was convened at Brussels to agree on restriction policies. The program finally agreed upon, named the Chadbourne Plan, in honor of the Chairman of the Cuban delegation, provided for the restriction of exports for five years by a quota system which would in turn restrict production. Part of the existing stocks were also included in each yearly export quota. The system was to be administered by an International Sugar Council representing all adherents. On May 9, 1931, the plan was formally ratified by Cuba, Java, Germany, Czechoslovakia, Poland, Hungary, and Belgium, which were later joined by Jugoslavia and Peru. Prices rose somewhat, although stocks continued to increase rapidly. It soon became apparent that, with continued depression, consumption would not come up to the estimates and that some of the quotas were set at too high a figure. Some disagreement developed among adherents to the plan, continuing to the end of 1931, while stocks continued to increase and prices to decline.

Tea

In 1920, the price of tea declined about 30%; at the instigation of the Indian Tea Association finer plucking was resorted to, and Indian tea production declined about 10% in the following season. At the same time other countries made restriction agreements which, with the aid of the lower price deterrent, were sufficiently successful to effect the absorption of the exceptionally large London stocks. From then until 1930, prices and stocks interacted quite normally.

During 1929, tea stocks were increasing steadily and prices were declining, and with the advent of the industrial depression an accelerated decline in consumption was expected. The British tea growers, this time with the cooperation of the Dutch estate owners in the Netherlands East Indies, agreed to restrict plucking during 1930 by various percentages up to 15, and amounting to some 57½ million pounds, with the result that stocks increased but slightly and prices were fairly well maintained. Due to increased native production, however, actual Netherlands East Indies exports declined but 3 million pounds in 1930, instead of the 10 million anticipated. The restriction was abandoned for 1931; the price, reacting downward about 20%, brought

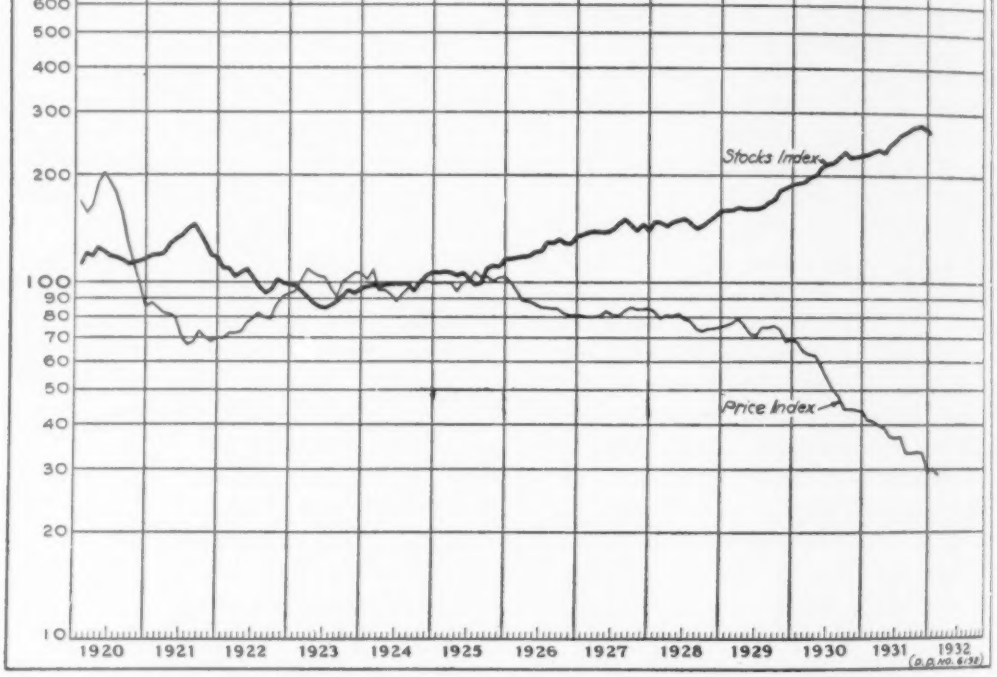
on some individual curtailed plucking so that stocks did not increase further during the year.

Tin

World stocks and prices of tin reacted quite normally after the 1921 depression. As stocks mounted and prices declined in the present depression, however, the British Government obtained a three-year agreement with the Dutch, Bolivian, and Siamese Governments (covering over nine-tenths of world production) to form an association to control production and restrict exports in accordance with quotas based on anticipated consumption. Existing supplies were to be released from the pool gradually as prices warranted. This agreement was ratified in June, 1931, to become effective as of March 1 in that year, and was immediately reflected in a check in the rapid increase in world stocks.

CHART II

COMPOSIT INDEX: COTTON, SUGAR, WHEAT, SILK, COFFEE, TEA, COPPER, TIN AND RUBBER



Wheat

World stocks and prices of wheat show quite normal interaction up to 1928, in spite of the numerous government aids and subsidies to the industry especially in wheat-deficit countries desiring to become self-sufficient. At that time the Canadian Wheat Pool inaugurated the policy of storing and

holding part of the crop from the market. This policy was aided by similar action on the part of the American Farm Board beginning in October, 1929. Thus, although stocks increased rapidly, prices declined only slightly in these years. In 1930, sustained production and stocks led to the realization that the supplies which were expected to be held temporarily in anticipation of reduced production could not be liquidated advantageously, and that these agencies could not continue to increase their holdings; prices reacted downward. As compared with the 1923–1925 average, prices had by 1930 declined almost proportionally with the increase in stocks. Prices within the United States were maintained at a somewhat higher level than world prices, by operations of the Farm Board, until its announcement in June, 1931, that no stabilization effort would be made in respect to the 1931 crop.

The Group

Taking the group as a whole, composite indices show the large volume of stocks on hand and the low prices in the two post-war depression periods. The rapid decline in stocks from the high level reached in the 1921 depression was greatly facilitated by an exceedingly short world cotton crop. The upward trend thereafter for several years paralleled the increase in consumption. About the time of the British coal stoppage, with a consequent shrinkage in British industrial demand in 1926, stocks began to increase at a more rapid rate, this tendency continuing up to the advent of a new rise engendered by declining consumption in the present depression. As viewed in terms of percentage variation, there has been a remarkably steady rate of increase throughout the period from 1923 to the present. Stocks are still increasing, being at the beginning of 1932 about two and three-quarters times the 1923–1925 average.

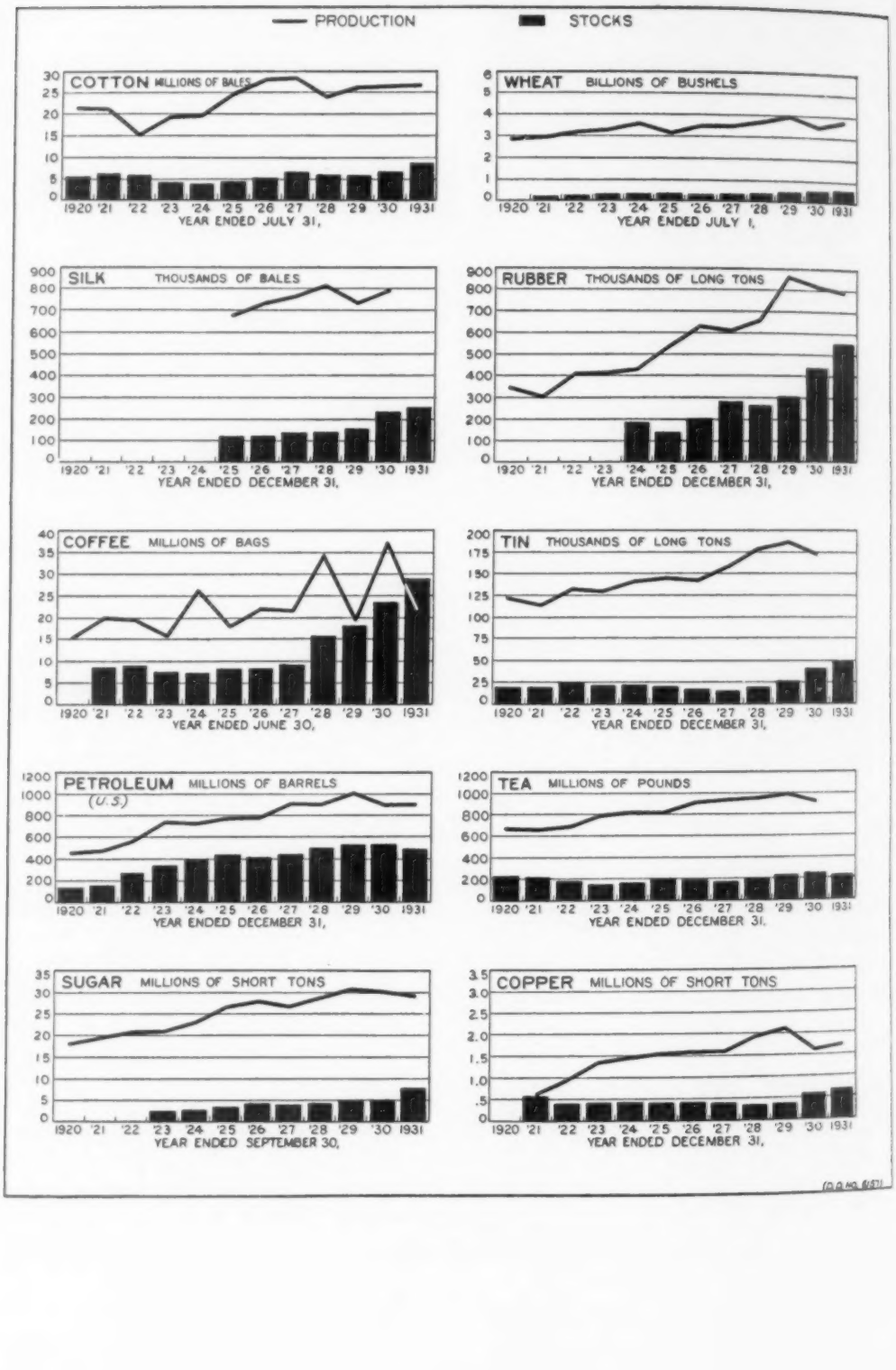
Some significance may be attached to the rate at which stocks were accumulating in the period from 1926 to 1929, this being in excess of the rate of increase in consumption and in the face of declining prices. It may be suggested that this situation was one of the intermediate causes as well as an important early symptom of the development of the present general world depression.

World production and consumption of the above-enumerated commodities

TABLE I
RATIO OF WORLD VISIBLE SUPPLIES TO ANNUAL CONSUMPTION

Year (Year Ended)	Coffee (Dec. 31) %	Copper (Dec. 31) %	Cotton (July 31) %	Rubber (Dec. 31) %	Silk (Dec. 31) %	Sugar (Sept. 30) %	Tea (Dec. 31) %	Tin (Dec. 31) %	Wheat (July 1) %
1921	48.3	.....	37.3	.....	.....	.....	31.6	18.3	6.1
1922	44.3	38.4	25.4	.....	.....	.....	25.0	18.6	6.1
1923	31.0	31.0	16.5	.....	.....	12.0	19.2	16.3	7.1
1924	33.7	28.2	18.5	39.2	.....	11.9	20.2	15.5	7.5
1925	38.2	25.1	19.7	24.3	17.9	14.3	23.7	12.8	7.4
1926	41.3	25.3	23.4	37.3	16.6	17.1	20.4	10.6	7.0
1927	50.7	21.8	26.4	43.6	18.1	16.5	18.0	9.4	8.4
1928	79.2	16.1	22.8	44.2	16.3	17.0	20.5	10.9	9.5
1929	81.1	17.6	22.9	33.9	22.3	18.8	22.8	13.9	12.4
1930	119.7	39.0	29.4	61.7	30.3	23.1	25.9	24.3	14.4
1931	117.2	44.0	38.0	82.1	.....	30.4	.....	.....	14.4

Chart III


PRODUCTION
STOCKS
COTTON MILLIONS OF BALES
YEAR ENDED JULY 31,
WHEAT BILLIONS OF BUSHELS
YEAR ENDED JULY 1,
SILK THOUSANDS OF BALES
YEAR ENDED DECEMBER 31,
RUBBER THOUSANDS OF LONG TONS
YEAR ENDED DECEMBER 31,
COFFEE MILLIONS OF BAGS
YEAR ENDED JUNE 30,
TIN THOUSANDS OF LONG TONS
YEAR ENDED DECEMBER 31,
PETROLEUM MILLIONS OF BARRELS (U.S.)
YEAR ENDED DECEMBER 31,
TEA MILLIONS OF POUNDS
YEAR ENDED DECEMBER 31,
SUGAR MILLIONS OF SHORT TONS
YEAR ENDED SEPTEMBER 30,
COPPER MILLIONS OF SHORT TONS
YEAR ENDED DECEMBER 31,

have each been increasing since the World War; that production has been forging ahead of consumption in recent years is evidenced by the piling up of stocks. Average annual stocks as related to production are presented in Chart III. The ratios of stocks to annual consumption are indicated in Table I, page 437.

The Influence of Prices

Prices are not only a measure of value, but also a determinant of profitableness or unprofitableness of a given producing enterprise. Planned output is regulated by the prices that are expected to be current when the proposed production will come on the market. Price stabilization or maintenance that appears to give some guaranty for the future therefore attracts increased production, and, if a control is to be more than temporarily successful, it must provide a workable substitute deterrent to such production. This deterrent must be comprehensive and as flexible in operation and as sensitive to important changes in conditions of production and changes in demand as are the major price fluctuations which it replaces.

In this connection it may be noted that, in the absence of control, prices of the products here under discussion have reacted directly to change in visible supplies, and have in turn then influenced production and consumption so as to bring supplies back to a more normal state. When the element of control has entered, this relationship is completely altered. Sustained coffee prices caused an extension of producing areas and the building up of excessive productive facilities within and without Brazil. Intensive educational effort by the American Farm Board failed to bring about any appreciable reduction in cotton acreage planted so long as it appeared that prices were to be stabilized. Rubber restriction on a fixed plan stimulated plantation development in other countries and the establishment of extensive reclaimed rubber and rubber substitute industries. Sugar-price stabilization aided plantation development in the formerly less important areas and soon threw the sugar industry into the arena of world politics.

That the *technique* of providing an adequate coordinated control to replace the regulative function of prices has not yet been developed is evidenced by the fact that all of the above-mentioned attempts were either entirely suspended or undergoing acute difficulties at the beginning of 1932, while prices had reached record lows.

The Political Factor

All the controls mentioned, except that of tea, have involved some form of national or international government action, and hence have definitely introduced the political factor as a major influence. The antagonistic interests of producers in different countries and as between individual producers in any one country, when controls have been functioning, have had to be resolved largely by political entities rather than by such abstract economic influences as prices. Political motives may at times lead to quite different action from that dictated by general economic interest.

There can be little doubt that governments already involved in the post-war resurgence of trade subsidies, quotas, prohibitions and tariffs were not so averse to assisting national industry when it seemed evident that the burden would fall on the foreigner as when it appeared that the incidence would rest

on their own nationals. The rubber and coffee restrictions are outstanding cases of the positive government reaction in this connection, while tea presents a case of negative response.

International agreement has been necessary in most cases to make controls effective, and such agreements have proved to be an element of weakness. Each state being sovereign and having many other international relations to guard and foster, the individual control may be subordinate to numerous considerations of no direct economic relationship. The fact, for example, that the Katanga mines are a feature in the Belgian colonial-development scheme seriously affects their relation to world copper control.

Finally, the administration of controls within countries involves problems in politics somewhat analagous to those of protective customs tariffs, without, however, having the advantage of an accumulated fund of years of experience upon which to draw for guidance.

Conclusion

A few summary statements may be made concerning the specific situations above mentioned: (1) World stocks of nine important raw materials and foodstuffs at the end of 1931 were almost three times what they were during 1923–1925. It appears that the increase was more rapid than might normally be expected with increasing consumption beginning in 1926, the development being greatly accelerated by decreased consumption during the present business depression. (2) Prices of these products have tended to fluctuate proportionally with extra-seasonal changes in world visible supplies, except in the case of organized large-scale manipulation. (3) Production or trade in all these products has been subject in the past ten years to some form of large-scale planned control, for the most part through governmental assistance or actual participation, but all controls were either suspended or in severe difficulties by the end of 1931. (4) Looking to the immediate future it would appear, on the basis of past experience, that the liquidation of the present world-stocks situation may be materially affected in so far as the agricultural commodities are concerned by the vagaries of nature;[2] permanent improvement, however, even with a resumption of greater consumption during recovery from the depression, probably depends on the slower economic process of eliminating the high-cost producers. Before this process has worked itself out, however, further effort in formulating national and international agreements may be expected.

[2] A severe frost in Brazil in 1918 so curtailed coffee production that, in spite of reduced war-time consumption, the State was able to dispose of immense stocks held over from 1917 with an alleged $32,000,000 profit. Extraordinary boll-weevil damage to cotton in the United States in 1921 so reduced production that the high and increasing post-war-depression stocks were rapidly liquidated.

PLANNING FOR THE NEWSPRINT INDUSTRY

By STANLEY T. FRAME

FACILITIES for the manufacture of newsprint paper in continental North America have expanded rapidly since the World War until existing capacity far outstrips any reasonable demand which may be projected for as distant a date as 1940. Ruinous prices, predatory competition, heavy capital losses, and reorganizations precipitated by the failure to earn charges on funded indebtedness, as well as by the failure to meet maturing obligations, have thoroughly demoralized and disorganized the industry.

The Nature of the Industry

A study of the regulation of the industry from the viewpoint of planning and stabilization is the burden of this paper. Such a project is a difficult one at best, but because of certain important circumstances in the newsprint industry it appears more favorable to the development of a planned or rationalized operating regimen than do such industries, for example, as textiles, lumber, or the various fuels. The basic reason for this condition is that the industry is remarkably homogeneous in structure and hence equally homogeneous with respect to very nearly all its problems.

The entire industry is necessarily committed to mass production, and the nature of its processes requires continuous operation on a large scale. A high degree of inflexibility is the result, and no company that can cover out-of-pocket costs plus a little more is willing to shut down except under the direst circumstances. The same raw material, derived from the northern coniferous forests, is used by all newsprint mills. The problems of transporting logs to the mill and those caused by the strictly seasonal operation of timber cutting are practically the same for the entire northeastern industry, where the bulk of the capacity is located. The same processes employed for the conversion of wood into mechanical and chemical pulps mean practically identical equipment for all mills. The final product is highly standardized, and designed to meet the requirements of newspaper printing equipment. Finally, newsprint is confined to a single use.[1] The newspaper publisher constitutes the only market, and a relatively inexpansible one, for the industry. Specifications of the existing product are such that no diversification of markets appears possible.

The industry must be regarded as a North American industry rather than as a domestic industry. This continental aspect is an entirely necessary viewpoint. Not only do no nationalistic restrictions interfere with the free movement of the commodity on this continent, but the industry has a strong and unified financial bond which relates it to the United States from a nationalistic viewpoint. Three-quarters of the total capital invested in the continental industry, exclusive of timberlands, is United States money. The estimated total investment, calculated on the basis of a conservative capital-

[1] Only 3% of the newsprint consumed in 1928 was used for other purposes than as raw material for newspapers.

ization per ton of daily capacity, amounted in 1931 to about $830,000,000. Of this total, $575,000,000 is invested in Canada, $210,000,000 in the United States, and $45,000,000 in Newfoundland.

It is imperative that some means be found to protect the interests of the workers, managers, investors, and also consumers whose welfare depends upon the better organization of the industry. Not only do the size and circulation of newspapers effectively determine the volume of newsprint consumption and hence circumscribe the industry's growth, but the possibility of development of cheaper methods of making newsprint pulp from southern pine threatens the existing industry. The present low level of newsprint prices, however, is the major deterrent to any serious competition from southern pine as a raw material for newsprint.

For convenience this study is subdivided into three parts: analysis of consumption, organization of the industry, and remedial measures through planning and stabilization.

I. Analysis of Newsprint Consumption

Since 1913, domestic consumption of newsprint has increased rapidly. For the annual amount of consumption, domestic production plus imports and less exports is the only index and for practical purposes may be assumed to be a satisfactory index over a series of years. These data are shown in Exhibit 1, the column *Balance at Home* representing the annual amounts available for domestic consumption.

From 1913 to 1931 the annual average increase in domestic newsprint consumption was 5.0%. The rates of increase were marked by considerable irregularity, unusually large increases having occurred in 1916, 1920, 1922 and 1926. The rates of decrease in individual years have been small in comparison, showing that the upward trend was not arrested, at least seriously, until 1929. The years 1930 and 1931 are the only two during the period when two successive years of decline have been noted. This condition may well portend a permanent recession in the rates of increase in newsprint consumption.

EXHIBIT 1
NEWSPRINT IN THE UNITED STATES, 1913-1931
(Unit: Tons)

Year	Production	Imports	Exports	Balance at Home
1913	1,305,000	220,000	43,000	1,482,000
1916	1,315,000	468,000	76,000	1,707,000
1920	1,512,000	730,000	49,000	2,193,000
1923	1,485,000	1,309,000	16,000	2,778,000
1926	1,684,000	1,851,000	19,000	3,516,000
1927	1,486,000	1,984,000	12,000	3,458,000
1928	1,418,000	2,157,000	11,000	3,564,000
1929	1,392,000	2,421,000	19,000	3,794,000
1930	1,282,000	2,280,000	10,000	3,552,000
1931	1,188,000	2,067,000	10,000	3,245,000

Source: *News Print Service Bureau.*

Per capita consumption has shown a very great growth over the last 40 years, as is shown in Exhibit 2. Judging from the trend, indications of the saturation point are quite apparent.

EXHIBIT 2
Per Capita CONSUMPTION OF NEWSPRINT PAPER
UNITED STATES

Year	Pounds *per Capita*	Year	Pounds *per Capita*
1890	6	1924	50
1900	16	1925	51
1910	25	1926	60
1913	30	1927	58
1917	35	1928	59
1920	41	1929	62
1922	46	1930	59
1923	50	1931	52

The consumption of newsprint is determined by two factors, newspaper circulation and the number of pages per

issue. These two general factors are, in turn, influenced by conditions peculiar to each. Circulation is determined by population, especially by urban population, and by literacy. The size of issue is a function both of the volume of newspaper space devoted to newstext and of the volume of advertising space. It is difficult to determine exactly the relative importance of circulation and size of issue. Data indicating the number of pages of identical newspapers over a period of satisfactory length are altogether lacking. The factors affecting circulation are better known and more measurable than those affecting size of issue.

An attempt was made, through the construction of an index which would be a useful guide, to ascertain the extent to which the above factors have affected newsprint consumption. The index, to be useful, should show a satisfactory degree of correlation with newsprint consumption. The data desired for such a measurement are circulation, advertising linage, and space devoted to newstext. Satisfactory data are obtainable for all except newstext, which has never been measured. The item of newstext consequently is the unknown variable. For comparative purposes, the year 1926 was taken as a base and the series representing newsprint consumption, advertising linage, and circulation were reduced to relatives. All computations are shown in Exhibit 3.

To derive the single index, called the "advertising-circulation" index, the relatives representing advertising linage are multiplied by those representing circulation. The reason for this procedure is that circulation must be taken into account as an essential factor in determining the aggregate amount of advertising appearing in every copy of every newspaper issued in the country. In developing a single satisfactory index for both daily and Sunday circulations, the latter was taken as equal to two daily circulations in terms of newsprint consumption. The former series, therefore, was assigned an importance three times the latter, and the resulting total divided by four to relate the base to 100.

The curves thus developed are shown in Exhibit 4 on the following page. The basic conclusion is that, while there does exist a fairly good relation-

EXHIBIT 3
Relatives: 1926 = 100

Year	(1) Newsprint Consumption	(2) Advertising Linage	(3) Circulation	(4) (Column 2 × Column 3) Advertising Circulation
1920	62.4	91.4	75.4	68.9
1921	56.9	83.1	78.7	65.4
1922	69.7	86.5	82.2	71.1
1923	79.0	92.6	87.5	81.0
1924	80.2	91.6	91.5	83.9
1925	84.0	96.2	94.2	90.6
1926	100.0	100.0	100.0	100.0
1927	98.4	96.8	105.2	101.8
1928	101.4	96.2	105.5	101.5
1929	107.9	100.5	111.7	112.3
1930	101.0	86.2	109.5	94.4
1931	92.3	78.6	107.1	84.2

CALCULATION OF AN INDEX FOR BOTH DAILY AND SUNDAY CIRCULATION

Year	(1) Dailies	(2) Sunday	(3)* Both
1920	77.2	69.9	75.4
1921	79.0	77.9	78.7
1922	82.7	80.7	82.2
1923	87.4	87.8	87.5
1924	91.7	90.9	91.5
1925	93.7	95.6	94.2
1926	100.0	100.0	100.0
1927	105.5	104.2	105.2
1928	105.5	105.5	105.5
1929	109.3	118.2	111.5
1930	110.0	108.1	109.5
1931	107.7	105.2	107.1

* Column 3 was calculated by adding the figures of Column 2 to three times the figures of Column 1, and then dividing this sum by four.

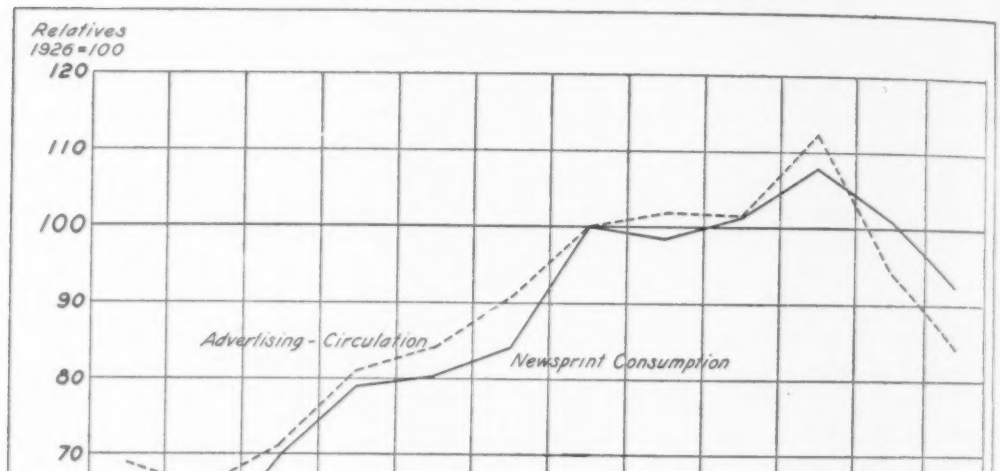
ship between the two curves over a series of years, nevertheless yearly changes in the aggregate volume of advertising, as expressed by the advertising-circulation index, are not closely correlated with yearly changes in the newsprint consumption index.

A positive inference, and one of important bearing, is to be drawn from the changing relationships between the total volume of advertising and the total volume of text. The periods during which the advertising-circulation curve was above the newsprint consumption curve represent periods during which advertising linage occupied a greater percentage of total newspaper space than did newstext. The reverse is true for those periods during which the advertising-circulation curve remained below the newsprint consumption curve.

As would be expected, the total space devoted to advertising would tend to be relatively greater than total space used for newstext in periods of prosperity than in periods of recession. Between 1920 and 1926 aggregate advertising volume represented a greater proportion of total newspaper space than did newstext volume; hence the former was assuming a greater relative importance in the demand for newsprint. A clear reversal of the trend occurred during 1930, and extends to the present. The deduction is that newspaper publishers have not reduced, and probably cannot reduce, the amount of space used for newstext in the same proportions as the decline in advertising linage. It would therefore appear that a certain irreducible number of pages per issue is demanded by the newspaper-reading public, and that

EXHIBIT 4

NEWSPRINT CONSUMPTION AND THE ADVERTISING-CIRCULATION INDEX



the publisher cannot adjust the size of his newspaper to correspond with a commensurate decline in advertising. This condition in itself is undoubtedly important in stabilizing the consumption of newsprint.

Estimate of Newsprint Consumption, 1932–1940

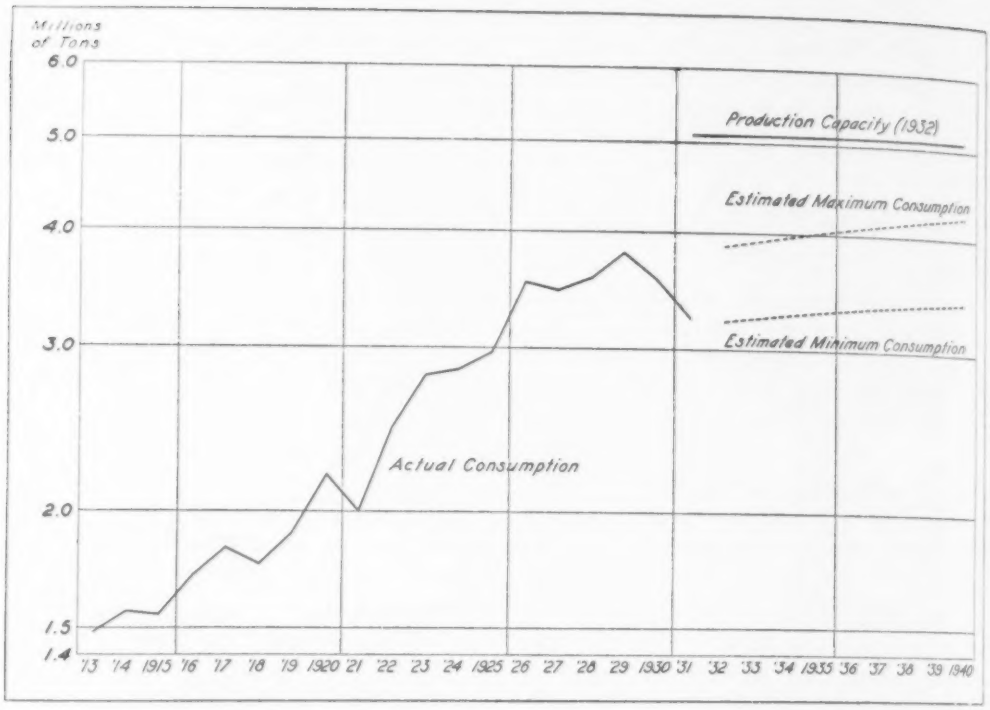
A rational approach to the problem of estimating future consumption appears to lie in the direction of establishing, within certain limits, a reasonable area within which consumption might ordinarily be expected to fluctuate. Having attempted to evaluate the importance of the major factors which have determined newsprint consumption in the past, it now becomes necessary to project these factors into the future if we are to derive any practical benefit from the foregoing analysis. Since certain important elements tending toward stabilization exist in the case of the newsprint industry, and are either present in a less degree or quite absent in the cases of other industries or commodities, it is feasible to take advantage of these basically favorable elements in any long-range planning for newsprint.

Two general elements are involved in the estimate of the future trend of newsprint consumption: population and the average annual amount of newsprint purchased by each individual. A reasonable maximum annual consumption and a reasonable minimum annual consumption are taken as the determining limits of the area in question. To arrive at the former estimate of consumption, the maximum reasonable populations and the maximum reasonable *per capita* consumption are assumed for the years intervening between the present year and 1940. The maximum reasonable future populations appear to be represented by the estimates made by Messrs. Pearl and Reed of Johns Hopkins University, indicating a population of 136,318,000 in 1940. On the other hand, the estimate of Dr. Louis I. Dublin of the Metropolitan Life Insurance Company indicates the smaller total of 130,900,000 in 1940. Since the increment to existing populations (according to Dr. Dublin's estimate) by the end of the decade is only half of the increment of the foregoing decade, such a rapidly diminishing rate of increase would indicate a minimum reasonable expectation by 1940.

The other side of the equation, *per capita* consumption, also involves the hazards of estimating, although the chance for error may be less here than in the case of population. Evidence of saturation is quite visible in the trend of *per capita* consumption, shown in Exhibit 2. Recognizing that *per capita* consumption of 62 pounds in 1929 was a heavy saturation of the market, and that increases in the amounts of advertising and news space are by no means likely to exhibit the sharp increases which occurred between 1922 and 1926, a final figure of 62 pounds *per capita* was settled upon as a maximum. Estimates of minimum consumption were similarly derived. Dublin's calculations are used for population and a minimum *per capita* consumption of 52 pounds is assumed. It does not appear likely that the latter will decrease for the period as a whole ending in 1940, since it represents the poundage for 1931 (see Exhibit 2) when an extreme recession in advertising linage occurred.

A projection of the maximum and minimum estimates for 1931 to 1940 is shown in Exhibit 5. The area between

EXHIBIT 5



the two lines approximately represents that area within which total newsprint consumption may reasonably be expected to fluctuate.[2] The uppermost horizontal line indicates existing capacity of about 5,100,000 tons *per annum*. This capacity is a net figure, after deductions have been made for Canadian consumption, Canadian exports to countries other than the United States, and exports from Newfoundland to other countries than the United States. The annual capacity of 5,100,000 tons, therefore, represents only that capacity which is competing for markets in this country. It appears that pres-

[2] The two following tables indicate the method of establishing the two estimates:

MINIMUM ESTIMATE
Based on Minimum Populations and Minimum *per Capita* Consumption of 52 Pounds

Year	Population (Millions)	Consumption (Thousands of Tons)
1932	124.4	3,234
1933	125.2	3,255
1934	126.0	3,276
1935	126.8	3,296
1936	127.6	3,317
1937	128.4	3,338
1938	129.2	3,359
1939	130.0	3,380
1940	130.9	3,403

MAXIMUM ESTIMATE
Based on Maximum Populations and Maximum *per Capita* Consumption of 62 Pounds

Year	Population (Millions)	Consumption (Thousands of Tons)
1932	125.0	3,875
1933	126.5	3,921
1934	127.9	3,965
1935	129.4	4,011
1936	130.7	4,052
1937	132.1	4,095
1938	133.5	4,138
1939	134.9	4,182
1940	136.3	4,225

ent manufacturing facilities are nearly 900,000 tons in excess of the maximum estimated consumption in 1940.

The difference between the minima and maxima for the year 1935 and the year 1940 represents a variation of about 22% and 25%, respectively. The maturity of the newsprint industry and the relatively stable consumption of newsprint are extremely important factors. They are factors upon which a rationalized industry might be predicated.

II. Problems of the Industry

Excessive capacity is the central problem of the industry. Total productive capacity at the end of 1931 was 19,000 tons per day or 5,700,000 tons per year. The continental industry is thus equipped to produce 1,700,000 tons per year more than the continent has ever absorbed, and over 2,000,000 tons in excess of the average used during the past five years. Present capacity is amply sufficient to take care of even the most optimistic forecasts of consumption for as distant a date as 1940. The immediate aspect of existing manufacturing capacity offers the explanation for the general disturbance and financial ills of the industry. The situation is clean cut as compared with that in some other industries. Summarized briefly, the causes responsible for the plight of the newsprint industry are overcapacity, the risks and burdens of forest ownership and operation, the method of financing, and finally the ravages of intense competition.

An underlying and permanent problem relates to raw materials as represented by the forest. The difficulties encountered here are not entirely unlike those encountered by other extractive industries. Unlike the situation in some of the metal and mining industries, such as aluminum, nickel, sulphur or even iron and steel, however, nowhere in the newsprint industry does there exist a control over raw materials that serves as any foundation for stability. The coniferous forests, which furnish the raw materials, are distributed over a very wide area with a disorganized ownership.

Other problems peculiar to this major raw material relate to the necessary assumption of the risks and burdens of forest ownership.[3] The risks of forest ownership are concerned with fire and wind, which take heavy yearly toll. No adequate fire protection has yet been devised either by individuals or by governments. Hence the financial losses by fire fall mainly upon the owner. Another burden of forest ownership consists in existing methods of taxation. All standing forests are taxed in the United States. Taxes are levied whether or not the wood is cut. Consequently, standing forests are a liability to the owner; they yield no present income, yet require a constant and heavy outgo. The pressure toward liquidation, accordingly, is great because of the necessity for relief from constantly accumulating tax burdens. Timber liquidation in this country has become a necessary act which creates pressure upon the forest-owning mill to operate even when newsprint prices do not justify economical mill operation. In Canada, however, taxation methods applied to pulpwood owned by the Crown[4] are more logical. A small fixed fee is charged, but the major part of the tax is paid on a royalty basis when the trees are cut.

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[3] *Cf.* Wilson Compton, "*Lumber—An Old Industry—and the New Competition*," X HARVARD BUSINESS REVIEW 2, January, 1932, p. 161.

[4] Crown Limit lands comprise 83% of the entire pulpwood resources of Canada.

The permanence of a newsprint mill depends primarily upon its pulpwood reserves, which must be sufficiently accessible in terms of cost to permit continued mill operations. Although there is no cheap pulpwood that is not being exploited both in the United States and in Canada, nevertheless reforestation is not being practised, and the original pulpwood assets are being dissipated, with no provision for any adequate replacement. The present low value, or lack of value, of standing pulpwood is sufficient explanation for the failure of newsprint companies to reforest their cutover pulpwood lands on a sustained yield basis.

Increases in idle capacity have brought successive and steady price reductions and a profitless competition. Plant investment per unit of product is heavy, and capital turnover is low. In terms of overhead charges, idle capacity means a heavy impairment of profits or a corresponding increase of losses.

The large degree of overcapacity (28% in 1930, and over 40% in 1931) is the fundamental cause of the difficulties of individual companies, but the method of financing the expansion of the last decade is an important factor, the effect of which has been to emphasize and magnify the existence of idle capacity. The largest and most important companies have been financed to a large degree by interest-bearing securities. Their capitalization has been far from conservative. The aggregate capitalization of the 13 most important companies comprising the greater part of total capacity is distributed as follows: bonds, 31.0%; preferred stock, 14.0%; common stock, surplus, reserves, 48.5%; current liabilities, 6.4%.[5] Not only have future earnings for equity stocks been predicated upon expected capacity operations, but even interest requirements for senior capitalization have been based on the same premise. Exhibit 6, an analysis of 13 of the largest

EXHIBIT 6

HOW NEWSPRINT COMPANIES FINANCE THEIR NET ASSETS, DECEMBER 31, 1930

	Bonds	Preferred Stock	Common Stock, Surplus, Reserves	Current Liabilities
Abitibi Power & Paper Company	33.6%	24.1%	37.3%	4.9%
Canadian International Paper Company	40.3	0	52.8	6.9
Canada Power & Paper Company	48.6	16.3	24.7	10.4
Price Brothers & Company*	16.2	9.3	69.3	5.2
St. Lawrence Corporation	13.2	47.8	32.9	6.1
Minnesota & Ontario Paper Company	33.1	4.2	54.9	7.8
Great Northern Paper Company	0	0	98.1	1.9
St. Croix Paper Company	0	7.9	90.2	1.9
Consolidated Water Power & Paper Company	8.8	0	85.2	6.0
Crown Willamette Paper Company	30.0	0	63.4	6.6
Spruce Falls Power & Paper Company	36.7	34.0	26.9	2.4
Bathurst Power & Paper Company	0	0	99.5	0.5
Pacific Mills, Ltd.	20.2	9.8	66.8	3.2

* Year Ending February 28, 1931.

[5] These figures are not averages of the percentages given in Exhibit 6, but are derived from the original data.

producers, shows for each company the percentage of total net liabilities represented by bonds, preferred stock, common stock plus surplus and reserves, and also by current liabilities.

Earnings for typical companies for 1928, 1929, and 1930 are shown in Exhibit 7 and represent the balance available for disbursement upon the preferred and common capital. The profit margins of at least 7 of the 9 companies were so small as to constitute an inadequate return. In the case of only one company, the Crown Willamette Paper Company, can the profit margin be called a fair one in comparison with that of other industries.

EXHIBIT 7

BALANCE AVAILABLE FOR DISBURSEMENTS ON COMMON AND PREFERRED STOCKS EXPRESSED AS PERCENTAGE OF TOTAL NET ASSETS

(After depreciation, depletion, interest and taxes, but before common and preferred dividends)

	Years Ended December 31		
	1930	1929	1928
Canadian International Paper Company	1.4%	0.09%	(d) 0.08%
St. Lawrence Corporation	2.1	3.0	*
Abitibi Power & Paper Company	1.7	2.7	1.8
Canada Power & Paper Company	0.7†	1.1	1.1
Price Brothers & Company	1.9‡	1.9‡	2.1‡
Minnesota & Ontario Paper Company	0.06	2.0	2.3
Crown Willamette Paper Company	6.8	10.2	7.9
Pacific Mills, Ltd.	4.6	6.1	5.3
Spruce Falls Power & Paper Company	3.1	1.5	(d) 0.3

* Company not in existence.
† No depreciation or depletion charged in 1930.
‡ Years ended February 28, 1931, 1930, and 1929, respectively.
(d) Deficit.

As a result of a series of combinations, control over capacity is highly centralized in Canada. In Canada 6 companies out of a total of 19 control three-quarters of total Canadian capacity. In this country the 6 largest companies control 60% of the capacity. The dominant groups in the North American industry are most conveniently classified in terms of the two countries. The leading Canadian companies, listed according to size, are: Abitibi Power & Paper Company, Consolidated Paper Company (formerly Canada Power & Paper Company), the interests represented by subsidiaries of the International Paper & Power Company in Canada, Price Brothers and Company, St. Lawrence Corporation, and the Backus-Brooks interests, which include Great Lakes Paper Company, Fort Frances Pulp & Paper Company, and Kenora Paper Mills. Similarly, the most important units in the United States are International Paper & Power Company, Great Northern Paper Company, Crown Zellerbach Corporation, Minnesota & Ontario Paper Company, Maine Seaboard Paper Company, and St. Croix Paper Company.

III. Stabilization: Planning and Remedial Measures

A summary of some of the major operations which the industry will undoubtedly have to undergo before it can be restored to satisfactory conditions is as follows:

A. Capacity must be scaled down to consumptive requirements.

1. No more mills should be built for a period of years.

2. Operations should be concentrated in low-cost mills.

3. Inefficient mills should be permanently closed down. The closed mills should not be sold at distress prices, since purchase on this basis by irresponsible individuals might be the basis for shoestring competition pending an improvement in newsprint prices. The sooner the original cost of inefficient mills is disregarded, the better for the industry, since original cost is not

the determining factor in present competition.

B. Taxation of standing pulpwood in the United States should be abolished in order to put the raw-material situation on a sound basis. State and Federal revenues from pulpwood lands should consist very largely of royalties paid only as the timber is removed.

C. The capital structure of individual companies must be reduced to a more conservative basis. A much greater part of permanent financing should be done by equity securities than by interest-bearing securities. Funded debts should be reduced through exchange of equity stocks for existing bonds. Much of the existing overcapitalization can be eliminated in this way, although the process entails a loss to all classes of security holders.

D. A policy-formulating group representing the whole industry should be organized. Such a group, composed of the leaders of the industry and supported by the whole industry, should be formed to promote better cooperation and better trade practices. It should supplement the activities of the News Print Service Bureau, which is strictly fact-finding and fact-disseminating in scope, through the promulgation of constructive policies.

E. Steps to be taken by individual companies:

1. Study the factors affecting the volume of total newsprint consumption over both short and long terms.

2. Interpret the above factors in terms of the company's newsprint customers and in terms of operation of the newsprint mill.

3. The best financial policy for individual companies would consist in establishing reserves. These reserves are designed to cover all major elements of cost in terms of materials, labor, and overhead and are established for the purpose of stabilizing the companies' finances. These stabilization reserves should be accumulated in periods of rising prices and drawn upon in periods of falling prices. A reserve should be set up for inventory, one for wages (labor), and a third for overhead. The method of determining the proportion of earnings which shall be set aside for the respective reserves is a technical matter involving adequate allocation as shown by a study of the accounting and statistical records of the company.

Thus, the size of the inventory reserve would be largely determined by the normal average inventory and the extent to which the total inventory is affected by price declines of newsprint. The newsprint company cannot protect itself against shrinkage of inventory values as can the flour mills and, to some extent, the cotton manufacturer or tanner. Neither can the newsprint producer maintain his inventory at a normal fixed value by purchasing raw materials at about the same prices and in about the same quantities as he sells in the form of finished products. First, the newsprint company does not purchase or cut its own pulpwood according to current requirements, but is forced to carry at least a year's pulpwood requirements at the mill yard. Secondly, the mill's output is usually not sold in small quantities and at prices differing over short periods of time, but is sold in large quantities and at prices which are fixed ordinarily for a year.

The wage and overhead reserves should be similarly treated. Since the worker in the newsprint mill is forced to take a definite risk in the selection of his work, some recognition should

be taken of this risk, as well as of the risk which capital takes. The wage reserve is not designed primarily to stabilize the worker's wage level, but rather to take care of fluctuations in the amount to be paid to labor, whether such variations are caused by changed wage scales or by varying quantities of labor. The reason for such treatment of the reserve is that employment, and not the specific rate of pay, is the paramount issue. For the worker in the pulpwood forests or newsprint mill the choice is frequently between something and nothing.

Establishment of the overhead reserve involves a forecast of the rate of operations. Estimates of depreciation, depletion, and interest requirements may be made rather accurately and involve no special problem. Since this class of costs is constant, regardless of rate of operations or profitability, this reserve is a fundamental necessity for maintaining the company's financial status on a more even level.

The Prospective Canadian Merger as a Basis for Future Stability

The most encouraging movement in the industry is the present rapprochement among the six largest Canadian units above mentioned. The proposed consolidation, or supermerger, according to present plans, will include about 9,200 tons of daily capacity out of a total of about 12,400 for Canada. Although legal obstacles to such a merger exist in Canada, antitrust legislation in that country has been much less restrictive in its interpretation than here. Since the provincial governments are vitally interested in the stabilization of their most important manufacturing industry, it seems highly improbable that antimonopoly laws will be invoked against the proposed consolidation. However, the success of the consolidation cannot be predicated upon the maintenance of high newsprint prices, since in this country retaliatory legislation would probably be passed which, under the existing interpretation of the antitrust statutes, might discountenance a similar merger here.

To be of any enduring benefit to the continental industry as a whole, as well as to be beneficial to itself, the proposed consolidation should be organized along the following lines:[6]

A. The consolidation must be a strong one, and the constituent companies must be merged on a satisfactory basis in order to prevent disputes as to equitable sharings in profits. The acquisition of specific properties must occur at equitable prices so that the consolidation will not be overwhelmed by an excessive initial capitalization.

B. The consolidation must include only low-cost mills. The consolidation must show substantial savings by operating only the most efficient mills at capacity. Manufacturing costs must be low enough to maintain a price for newsprint which will be below that which would attract speculative capital, and low enough to discourage overseas competition.

C. The consolidation must have a capital structure strong and conservative enough to meet all contingencies.

D. The consolidation should establish reserves allocable to inventory, overhead, and wages, as previously outlined.

The establishment of such a merger would have a stabilizing influence upon the entire North American industry;

[6] These suggestions are not all original. The more important ones were outlined by J. L. Fearing of the International Paper Co. in a letter to customers in December, 1931.

it would effectively prevent building for greater capacity and at the same time would eliminate some of the existing inefficient capacity; finally, it would force independents both in the United States and in Canada to operate more efficiently with respect not only to mill operation but also to the management of raw material reserves, and to evaluate more properly the elements of cost.

Recent Developments

Several developments within the industry during the current year make advisable the addition of this note. The estimate of minimum newsprint consumption (see Exhibit 5, page 446) which was made at the beginning of the year, stands in need of some modification. This estimated minimum per capita consumption was set at 52 pounds for the 1932–1940 period, and represented actual per capita consumption in 1931. Apparent consumption during the first four months of 1932, based on shipments from United States and Canadian mills, was nearly 8% lower than for the corresponding 1931 period. Newspaper advertising linage for the first quarter of 1932 was about 16% below that of the corresponding 1931 period. This decline in recent months, which may not be compensated for by an increase in the succeeding months, may mean that the minimum per capita estimate should be substantially revised for 1932, but does not necessarily involve such a revision for the entire period ending in 1940.

Of greater significance, however, is the fact that the maximum per capita estimate of 62 pounds needs no immediate qualification. Barring radical improvements in manufacturing technique, which do not appear imminent in view of the long-standing uniformity and standardization of processes and equipment, existing capacity, now in excess of the anticipated needs of 1940, may become obsolescent at a much less rapid rate.

In order to indicate the effects of 1931 operating conditions as specifically as possible, as well as to make the comparisons in Exhibit 7 (page 449) more timely, the balance available for disbursement on common and preferred stocks expressed as percentages of total net assets is as follows:

Price Brothers and Company.....	2.5% loss
Abitibi Power and Paper Company.	0.5% profit
St. Lawrence Corporation.....	0.5% loss

These data are comparable with those contained in Exhibit 7. Similar data covering 1931 operations of the other newsprint companies are not yet available.

DISCRIMINATING RATES

By RICHARD S. MERIAM

THE value-of-service principle in railroad and public-utility rate-making is an old subject; the practice of charging what the traffic will bear, however, has lost none of its power to provoke controversy. In recent discussions of the electric-power industry, prices charged small lighting customers have been selected for special emphasis. In the railroad field, the inroads of truck competition on the highly profitable freight in the higher-rate classifications have led to proposals for regulation. Those who oppose discrimination (classification) are ready to see the roads lose the business to competitors, while those who defend it are fearful of the effects of such a loss upon the backbone of our transportation system.

The purpose of this paper is to examine the whole subject from the point of view of economic theory. We must disclaim any hope of settling the matter or any suggestion that this approach is the best one. On the contrary, economic theory is only one of many approaches. And, here as elsewhere, when economic theory is useful, much of its usefulness is a confession of its own limitations; it can discover questions rather than answer them. Economic theory cannot *justify* discriminating prices, because it cannot answer the question, What is justice? It may serve, however, to separate the confusion over the problem of rate-making from the controversy over ultimate ethical standards. It can also show the connection between the problem of the rate structure and the problem of the rate level.

One must disclaim also any desire to awaken prejudice by using the word "discriminating." In this paper, "discriminating rates" will include all classifications or special rates, all adjustments of the prices to the different values of the service to different customers. Discriminating prices are seen most clearly when contrasted with the uniform prices in competitive industry, where the products produced under competitive conditions are sold at the same price to all customers, even though some of the customers would have paid higher prices for at least some of their purchases rather than go without.

It is recognized that absolutely uniform prices are not rigidly adhered to in so-called competitive industries, but that subject will not be discussed here. Although the shrewd trader and the hard bargainer may often purchase below the market, the reader is requested to leave those considerations aside and focus his attention upon the substantial uniformity of prices that exists in such competitive markets as those for sugar, cotton, and wheat. Few competitive manufacturers can hope to allocate their overhead costs to one of their products and/or to one of their markets and sell the balance for a price that will cover only the out-of-pocket expenses. They would find that their competitors would threaten their position in those markets where their prices were high. They are forced to spread their overhead cost over their entire output.

Competitive manufacturers find themselves forced to sell below cost

in periods of depression and either implicitly or explicitly to ignore the burden of overhead costs. Our problem here is not concerned with the variations in prices between good times and bad. Charging what the traffic will bear is a persistent and regular practice of our railroads and utilities. They cut prices to some of their customers in both prosperity and depression, in periods of expansion as well as in periods of overcapacity. Discrimination is certainly a regular practice, and usually one openly avowed.

I

Attempts have been made to use ingenious cost allocations to explain away discriminating prices based upon the value of service. In one form this is done by computing the separate costs for each class of business. Some price differentials are to be explained in this way as, for example, the railroad transportation of live stock where there are special costs of feeding and watering which are not absorbed by the roads. Nevertheless, separate costs cannot be computed without allocating fixed and indirect costs, which are very heavy in both railroads and utilities. The arbitrariness of the allocation of overhead in calculating the separate cost for each class of the business becomes obvious to anyone acquainted with cost accounting. The accounting methods employed to justify discriminating prices would not be tolerated by any manufacturer trying to control his operations. The methods are so clearly arbitrary that there can be no doubt that they are not the basis of the prices set, but are rather an attempt to justify them afterwards. In the railroad and telephone industries this is admitted, and no attempt is made to compute the total separate costs.

A second form of cost analysis brings in the principle of joint costs. Supplying two sets of customers with electric current and freight service is likened to producing a main product and a by-product, but this analogy is false. Supplying two different markets with the same commodity is not the same process as finding markets for two products which must be produced together. In true cases of joint cost it is technically impossible to produce more of the one product without producing at least a little more of the other. The separate markets for the two are not exclusively matters of the ingenuity of the rate-maker, but come from the peculiarities of the commodities themselves. Cotton seed and ginned cotton sell at different prices and in different markets because they are different commodities. Electric current, on the other hand, sells at different prices for domestic lighting and for industrial power because the rate-maker has separated the two markets. In the old days kerosene was used for lighting and for portable heaters, but the seller of kerosene was unable to keep the two markets separate. We must distinguish between the separation of markets which comes from price control and that which arises out of the technical peculiarities of commodities necessarily produced together.

Here, again, the objection is not that the principle of joint cost has no application, but that its application is limited to a minor part of the discrimination actually existing. There is a limited field in which the joint-cost principle explains the rate structure. If freight cars go in one direction, they must eventually come back. The services in both directions are technically inseparable, and the principle of joint

cost applies. In this respect the railroads are like ocean shipping. The great bulk of English imports brought about a balance of tonnage which made shipowners ready and willing to carry export coal for very low rates. These low rates did not lead anyone to criticize this discrimination or to raise the cry of monopoly, because the rate structure was recognized to be in part the outcome of competition. The principle of joint cost explains low rates for the back load in the railroad field and low prices for off-peak power in the electric industry. Power production for the peak necessarily means capacity for off-peak periods. To charge uniform prices for the two would mean the waste of the off-peak capacity.

Although the principle of joint cost thus explains some of the existing discrimination, it fails to explain it all. It will not explain different carload rates for two cars on the same train between the same points or different rates for two customers with the same load factor. The principle fails, as well, to explain low prices on gas for house heating. These low prices come in the period of the year in which gas production reaches its peak and exist side by side with the higher prices charged for gas for cooking ranges; and of the two, the ranges have the smaller seasonal variation in the load.

II

The fact that charges are based in large measure upon what the traffic will bear should not be obscured by real or fanciful competitive-cost principles. The discriminating prices are based, not upon special costs or joint costs, but upon the different values of the different services. In competitive industry, such differences in value do not lead to discriminating prices. In utilities and railroads, since the companies are service monopolies, discrimination may be practiced and the value-of-service principle may be applied. As service monopolies, the utilities can discriminate in prices without fearing that the resale among their customers will break down the stratification of the market. In some sections of the market the customers are not ready to pay much for the service from any source, or else they have substitutes or alternative sources available to them. Few customers of any electric company are ready to run a water heater if they have to pay the same rates as for electric light. Where the customers have substitutes or alternative sources available, the position of the company is close to that of a competitive business. Where such competition between industries is present or where the want is not urgent, the company must keep its prices down.

In other sections of the market, where the substitutes are markedly inferior or very expensive and the wants are urgent, higher prices can be charged without losing the market. Here the company is in a monopolistic position, balancing the gain in volume against the drop in price and the increase in costs. If a cut in price will not bring an increase in net revenue, the company's interest is to hold up the price in this section of its market and cut the price in other sections. An electric-power company does not need low prices to meet gas competition for domestic lighting, but it does need them to get electric ranges into use.

The practice of charging what the traffic will bear has been defended on the ground that it is necessary to secure full utilization of the plant capacity. Where excess capacity is present, it is held, low prices in some sections of the

market are necessary to avoid waste, and higher prices in other sections are necessary to avoid bankruptcy. If high prices were made uniform, it is contended, much of the business would be lost; if low prices were made uniform, the overhead costs would not be covered.

In the first place, this justification is inadequate. Charging what the traffic will bear is not limited to periods and companies where overcapacity is present. It is a general and persistent practice of service monopolies. It is the practice of such companies not only when they have excess capacity, but also when they are expanding their capacity by reinvestment of earnings and by new issues of securities. Furthermore, this so-called justification is no justification at all, when judged by competitive standards. If there is excess capacity in a competitive industry, the investors pay the penalty. They suffer from low prices and they cannot escape the consequences of their folly by charging discriminatingly higher prices in some parts of their market than in others. In the cotton-textile industry there has been much complaint over excessive competition and unprofitable prices. Some companies have been forced to liquidate and to dismantle their plants. Why should the investors in a railroad or utility be permitted to shift the burden of their mistakes to some of their customers? Why should they be treated more generously than investors in a competitive industry? According to competitive standards, the burden of mistaken investment should fall on those who committed the mistake. The prices and rate of return are justified only if the investment is justified. Rates, investment and return are interrelated problems. Rates cannot be justified by assuming that investment is justified; and investment cannot be justified by assuming that rates are justified.

The foregoing argument may be summed up in this proposition—discriminating prices are not justified (except when they reflect special or joint costs) when justification is measured by competitive standards. When discriminating prices bring a greater revenue than uniform prices would obtain, it follows that the rate of return must be higher than the competitive return or that the investment must be in excess of the competitive standard. Let us illustrate by assuming that the competitive rate of return is 7%. If discriminating prices yield a net income of $56,000,000, and uniform prices would yield $49,000,000, the rate of return must be 8% if the investment is $700,000,000, as it would be under competition. If the rate of return were 7%, the investment would have to be $100,000,000 greater than the amount justified by competitive standards. The essential question is, therefore, the justification of the competitive standards themselves. In much popular discussion, the whole argument rests upon the assumed merits of competition; and, even in some recent articles in scientific journals, the standards of competitive prices and competitive investment are explicitly affirmed.

III

Competitive standards are unsatisfactory. I do not intend here to abandon economic theory and discuss social justice, nor do I wish to elaborate the theme of the wastes of competition and emphasize the basic fact of public-utility economics—that costs are, or at least can be, lower under monopoly.

Economic theory has demonstrated that competitive standards are unsatisfactory when measured against the standard of maximum economic production. The economic theory to which the reader's attention must be directed is "the doctrine of maximum satisfaction" developed by the late Professor Alfred Marshall of Cambridge University. Marshall's argument cannot be explained fully without much refined logic of a mathematical sort; only a brief outline will be given here, in the hope that the point will be made clear.

It is convenient to begin with the assumption that the volume of production is so adjusted to the demand that goods sell at their costs (including rent, depreciation, interest on owned capital, and normal profits). This definition of cost is not necessarily the proper one, but it is appropriate for our present purposes and is used throughout this paper. The relative quantities produced of commodity A and commodity B are adjusted without regard to the precise cost of producing a little more A and the precise saving of producing a little less B. We know that more A would sell for less than cost and less B would sell for more than cost, but the adjustment of the relative quantities takes place under competitive conditions without regard to the exact balance of gain and loss of small changes in the relative quantities. If commodity A is produced under conditions of decreasing cost, if volume brings great economies, the loss by exceeding the competitive volume is relatively small. Moreover, if commodity B is produced under conditions of increasing cost, if the last additions to make up the competitive volume have been very expensive, great savings can be made by giving up such expensive additions. By retaining such expensive additions, the price to cover their cost must be paid not only to the producers of those units, but also to all other producers. As a result of these differences between A and B, a transfer of our productive powers to A from B will bring a net gain. A subsidy for A raised by a tax on B will increase the total production of the nation.

The significance of Marshall's doctrine for the problem of discriminating prices is this: competitive standards do not provide a satisfactory basis for judging public-utility rates and investment, because these standards themselves are faulty when tested against the standard of maximum economic production. If competitive standards were applied, the utilities would charge uniform prices and would cease to expand their output when the price became equal to the average cost. They would stop at this point, even though the value of the additional product would be greater than the additional cost. Public utilities are typically industries of decreasing cost; an increase in volume is accompanied by a less than proportionate increase in total costs; and the additional or increment cost of greater volume becomes smaller. If the economies of size were not so important, it is also to be noted, we should be better off with a great number of small companies with small territories. Public utilities are called cases of the economies of large-scale production, but it should be noted that "production" is here used in a broad sense to include "distribution." In fact, economies in distribution are often of major importance. An electric power company finds it cheaper to distribute the same kwh. in a small territory than in a large one. Gas mains with a larger capacity can be

laid without a proportionate increase over the costs of putting in small mains. With the economies of volume, it is uneconomic to stop expansion short of the point where the value of the additional product fails to cover the increment cost.

In competitive industries, there are many reasons for a one-price policy and uniform allocation of overhead costs, but these reasons do not apply to service monopolies. In competitive industries, expansion must stop at the point where the average costs are covered. This is uneconomic if the industry is one of decreasing costs, for then the value of the next additional product would be greater than the increment cost. But competitive industry cannot produce this additional product, because the lower price obtained for it would be the uniform price for the entire output. The fall in the total receipts would result in a net loss. Competitive industry cannot consider only additional value and increment cost; it must consider uniform prices, total receipts, and total costs.

A monopoly operating under conditions of decreasing cost, therefore, should not be forced to adopt the competitive expedient of uniform allocation of costs. This conclusion is reenforced by another consideration. An ordinary monopoly which is forced to sell at uniform prices can make monopoly profits only by limiting its production so that prices are above cost. A service monopoly forced to sell at uniform prices would be in the same position. It would resist lowering its price to get additional business because it would lose some of the revenue from its existing business. The profit motive, called in to develop the service, would work to limit the development. When permitted to charge discriminating prices, the service monopoly is interested not in restricting development, but in getting the maximum amount of business.

This argument, it will be seen, cannot be used to justify the practice of charging *all* the traffic will bear. If the charges on each part of the business are just high enough to cover its increment cost, the total costs are covered and there is no monopoly profit. If allowed to charge *all* the traffic will bear, the company will either earn an excessive return on its investment or sell some services at less than their increment costs. The first is extortion, and the second is waste. The distinction between reasonable and unreasonable discrimination is the distinction between prices at increment costs (including, by the definition previously given, normal profits) and prices above increment costs. Unreasonable discrimination would result in such a profit to the company as must be checked by public opinion or regulation.

This defense of discrimination involves, as Professor A. C. Pigou has pointed out in his *Economics of Welfare*, great skill in rate-making. The gain from the decreasing costs would not be obtained if the rate schedules excluded many buyers ready to pay for one service higher prices than those actually charged for another service. If the rate for domestic lighting is kept at 8 cents per kwh. and the rate for industrial use is put at 1½ cents per kwh., there is a loss if there are many potential customers unserved because they are not willing to pay more than 6 cents for lighting. Because the monopoly is unskillful, it is diverting kwh. from a more urgent to a less urgent use. As a result, it is not developing its volume and it fails to obtain the decreased costs. It is not producing more than

would be produced under a régime of uniform prices, but is merely diverting some of its production from one of its markets to others in the hope of greater profits. Failure to develop the economic maximum of service is, of course, against the interests of the monopoly itself. Some loss of this sort is unpreventable. The object of rate-making is to reduce this loss to a minimum so that the rates will get as much profitable business as possible. The study and application of the art of rate-making is so decidedly in the public interest that we must put up with much refinement and intricacy. Whether in fact the rate structure obtains the advantages of full development must be examined in each case. In other words, justification here as elsewhere involves judgment. Economic theory can only define the issues on which judgment must be obtained.

IV

The economic theory underlying this argument in favor of discriminating rates is of the type called "static." Although economic theory borrowed the term originally from physics, it now uses static analysis essentially as a device to gain precision by focusing attention upon a limited number of considerations. It is sometimes derided by those who feel that matters of vital importance have been left out. From the point of view of "dynamics," the chief weakness of the argument is that it is concerned with the desirable size of development, rather than with the process of developing. The essential problem, it may be urged, is not what prices will result in the best satisfaction of a given demand, but is rather the process of developing service to meet a growing and changing demand and of stimulating the demand. The problem of rate regulation must include some consideration of initiative and progress.

Dynamic considerations of this sort strengthen the case for discriminating prices. The company is able to lower prices in one section of its market and stimulate the demand there without prejudicing its financial position and the attractiveness of its securities. It can experiment with some of its prices without courting disaster. It can increase its plant investment in anticipation of demand and show large enough earnings in the process to attract further investment. In some cases the plant must be developed before the demand can be awakened. Railroads have been built before the territories were settled. Hydroelectric stations have been constructed before the customers have installed electric motors to drive their machinery. Even with the aid of discriminating prices, losses have been incurred. Without such aid, however, the development would have been both smaller and slower. Discriminating prices thus make it possible to combine security and risk-taking. Such dynamic considerations are difficult to handle with technical precision and are peculiarly subjects on which opinions and judgments may well differ. To some these considerations will appear more important than the doctrine of increment costs. Whatever their force, they serve, in my judgment, to strengthen the argument for discriminating rates.

V

A vague understanding and acceptance of these static and dynamic arguments for discriminating prices may underlie the firmly established public policy in their favor, but even so our public policy is vague and contradic-

tory. If the argument of this paper is correct, levying taxes on public utilities is not justified, and subsidizing truck competition with railroads is the height of folly. The argument in favor of discriminating prices which has been advanced in this paper consists essentially in pointing out that decreasing-cost industries, where an increase in volume is accompanied by a less than proportionate increase in total costs, are proper subjects for public subsidy. It would certainly support the proposition that the company's plant, gross revenue, and net income should be exempt from taxation. Yet the utilities and the railroads continue to get the help of discriminating prices, on the one hand, and to suffer the burden of heavy and increasing taxes on the other. A first task of national economic planning would be to remove such contradictions. Discriminatory taxes on public utilities nullify the gains from discriminating rates. Nondiscriminatory taxes leave the gain from discriminating rates; the public would be still worse off if both uniform prices and uniform taxation were imposed on the utility. But even nondiscriminatory taxes bring a net loss to the public, for taxes on an industry operating under conditions of decreasing cost yield a revenue to the government which is smaller than the loss to the consumers.

Public opinion is peculiarly alert to the advantages of such industries when they are first started or about to collapse. In this country we subsidized our railroads to get them built and our street railways to keep them in operation. When the service monopolies are firmly established, they are most exposed to attack. Various sections of the community then feel that small favors can be granted them without impairing the company's vigor. I call attention to this without desiring to bemoan our political and sociological realities. It is important as a reminder here that standards of social justice are inevitably controversial. The whole argument of this paper rests upon the acceptance of the standard of increased and increasing production. I must disclaim any intention to urge the merits of this standard, to claim for it a "scientific" character, or even to adopt it for my own. It was used merely as a starting point. If this standard is rejected for some of the standards of "distributive justice," the price of domestic lighting and the freight rates on agricultural products may be condemned as unreasonably high. To some writers and speakers the special interests of the small consumers and the farmer in low prices are more important than the interest of the whole community in increased and increasing production. They defend their view with arguments that are not only eloquent and persuasive but also important. The merits of such standards of distributive justice are, however, outside the scope of this paper. Economic theory can only separate the analysis of the problem from questions of judgment and of ethical standards.

ECONOMIC SIGNIFICANCE OF THE TANK CAR

By R. G. SKERRETT

IT costs money to move anything any distance, and someone has to pay the price for that service—no matter whether it be done efficiently or inefficiently.

This truism is confirmed every day by activities in the manifold departments of industry and transportation. As a consequence, diversified facilities have been devised which, within comparatively narrow limits, shorten the time and lighten the task involved in shifting a body or in moving commodities. These aids stimulate production and lead to savings by reducing effort and lost motion. In one way or another they contribute to economies in mass production; mass production, to be fully profitable, however, must have means available by which to reach distant markets readily. The purpose of this article is to make clear the ever-widening functions of the modern tank car in efficiently linking mass producers with large-scale consumers.

Plant managers and economists are beginning to realize that mass production tends to clog business unless there is a commensurate system of distribution which can handle large volumes and carry them expeditiously to the immediate purchaser. In broad terms, the internal processes of the human body do not differ in principle, in their varied interrelations and reactions, from the allied operations of industry, transportation, and marketing. A factory cannot make things, nor can others utilize them to advantage, unless the intermediate link of transportation performs its part in what might be termed the rhythm of distribution.

The Beginning and Early History of the Tank Car

The railroads of this country have developed to their present state in the course of a century, and there is every reason to believe that many more equally marked improvements will come. Astonishing changes have been made in types and kinds of railway motive machinery and also in freight cars. The improved tractors and vehicles have greatly increased the efficiency of our trunk lines as common carriers and as revenue earners, and in these betterments the tank car has won for itself a notable position despite the traditional opposition to change which long characterized the railway man. There are indications that the tank car, in addition to carrying fluids, is to perform a still wider service with bulk dry materials which have heretofore been transported in a different way and at a much higher cost.

The tank car had its beginning in the exigencies of the very early days of the oil industry in Pennsylvania. It was then found impracticable to move petroleum profitably in barrels from the wells to far-flung markets. Makeshift tank cars carrying wooden vats were first devised as a substitute, and crude as they were those vehicles justified themselves in service. The first steel tank car, with a horizontal tank, was brought out in 1871; from that time on, betterments were made until tank cars were developed capable

of holding 4,000, 6,000, 8,000, 10,000, 12,000, and 16,000 gallons of oil.

Up to a fairly recent date, tank cars, with few exceptions, were used well-nigh entirely in transporting petroleum and its derivatives; even today, 60% of the tank cars in the country are engaged in moving crude oil or its refined products. The remaining 40% of tank cars are extensively employed in handling bulk cargoes of chemicals of many kinds—the increase in this service being in step with the astonishing latter-day developments of America's great chemical industry. Tank cars are also utilized in large and growing numbers in the transporting of bulk cargoes of many other fluids and dry substances.

The building of tank cars is a highly specialized branch of industry, and there are several concerns in this country engaged in the business. Among the largest of these is the General American Tank Car Corporation, a $90,000,000 concern which has been constructing tank cars for thirty-odd years. This organization maintains ten plants strategically located, and it operates 28,000 tank cars. In addition to the foregoing concern, are the following companies engaged in building or leasing tank cars: the Pennsylvania Conley Company, the Union Tank Car Company, and the Shippers Car Line. It may surprise many people to learn that the railroads of the country own only about 7% of the tank cars—the remainder are owned and operated by private companies. The reason for this is that the maintenance and employment of tank cars is a somewhat complicated business, and most users prefer to lease the cars and to put the burden of railway accounting and repair upon the shoulders of the car-building lessors. A carefully developed system of records and accounting has been devised for this purpose.

In 1911, there were 37,874 tank cars available in the United States. Ten years later our tank-car fleet totaled 133,977—plainly indicating how demands during the World War and the years immediately following caused a rapid increase in their building. According to the latest statistics at hand, we had 162,517 tank cars at the close of 1930. Owing to the depressed state of business generally, only a few hundred new cars were built in 1931, so the number of cars in service at the end of 1930 is approximately the size of the nation's tank-car fleet today.

Present-day Uses of the Tank Car

A suggestive indication of the vital service which tank cars are now rendering in some of the varied departments of the nation's industrial life may be given by an enumeration of some of the commodities so moved within the United States during 1930:

Product	Carloads	Tons
Petroleum, crude	197,221	6,598,106
Petroleum oil, refined and all gasolines	1,667,821	47,385,636
Petroleum products (not otherwise stated)	9,053	226,340
Fuel oil, road oil, and residue	344,074	11,642,471
Lubricating oils and greases	168,332	3,646,811
Alcohol, denatured	15,965	347,938
Asphalt	85,277	2,925,169
Cotton-seed oil	33,822	990,737
Linseed oil	7,086	184,361
Molasses, blackstrap and beet residual	15,598	713,994
Sulphur	34,263	5,712,202
Sulphuric acid	42,974	2,047,739
Totals	2,621,486	82,421,504

The foregoing figures do not include the hundreds of other products hauled by tank cars, nor do they bring up

to date the quantities applicable to the commodities just listed. They do serve, however, to broaden common understanding of what tank cars are doing in the handling of products in large-unit volumes—thus aiding the mass producer in the distribution of his output in a labor-saving, expeditious and economical manner.

Tank cars are doing more than serve industries or businesses that have been established for years—they are contributing in their peculiar way to the promotion of new enterprises which require just such carriers to move their commodities, at a reasonable cost, to more or less remote consumers. Let us make this plain. When circumstances permit a manufacturer or producer to locate his plant where he will, he naturally chooses a site either where a supply of low-price power can be had or where he may be close to sources of essential raw materials. But if they are not available to him by means by which he can reach his markets at a permissible cost, then he must place his plant near the consumers of his commodities. This condition is due in a measure to the fact that a higher price is charged for the transportation of finished products than for raw materials.

Numerous big undertakings are now established in comparatively out-of-the-way sections of the country, where circumstances contribute to great operating economies for one or more reasons; remoteness from markets is neutralized to a considerable degree by the distinctive services rendered by tank cars. Tank cars obviate the use of a multiplicity of small-unit shipments—thus avoiding the first cost of the small containers; the expenses incidental to their filling, sealing, and possibly packing; and their loading and unloading during shipping. Furthermore, barrels, drums, carboys and other containers must be provided anew for each shipment or returned empty for refilling. Freight charges are levied on this return service. When commodities are transported in tank cars, on the other hand, freight is paid only on the loaded cars, and the railroads do not charge for the return of the cars if the empty mileage does not exceed the loaded mileage. This, of course, is not the whole story concerning compensation, because rates on loaded cars must cover the entire service, including the return of the empty cars; such rates apply to the service as a whole, however, and do not effect a differential rate on individual shipments. The freight rate on a cargo is the same regardless of whether the car is returned to the point of origin or not.

The Basis of Charging for the Use of Tank Cars

It is an established practice, approved by the Interstate Commerce Commission, for railroads to pay the owners for the use of tank cars, refrigerator cars, or express refrigerator cars. This procedure is based upon the following theory: A railroad, by its published tariffs, declares itself ready to transport any commodity, and, therefore, the road is obligated to provide a suitable carrier for any form of freight so listed. Accordingly, the railroads pay so much a mile, either empty or loaded, for privately owned or leased special rolling stock of the types mentioned. This practice makes it possible for the railroads to handle freight that otherwise they would have to refuse or for which they would have to furnish cars of their own capable of discharging the service required. After analyzing what it would cost them to

own and to maintain these specialized vehicles, and computing the savings by not owning them, the lines stand ready to reimburse the private owners or lessees by paying 1½ cents a mile for the use of a tank car, 2 cents a mile for the use of a refrigerator car, and 2½ cents a mile for the use of an express refrigerator car. It is readily understandable that a railroad wants to be in a position at all times to move any freight offered, and the availability of privately owned cars of special types for certain services is a convenience by which the railroads are generally glad to profit. At times, a tank-car company leases a car or cars to a railroad which, in its turn, deals directly with a shipper. However, whether a railroad is the lessee or merely acts as the carrying agent for a shipper leasing a tank car, the railroad pays the tank-car company at the rate already stated. If the empty mileage exceeds the loaded mileage, then the money allowed a lessor as mileage earnings must be returned to the railroad for this excess empty mileage, and a freight rate must be paid the railroad for hauling the empty car to the extent of excess empty mileage.

The regulations regarding leased tank cars, as between the railroads and the lessee, are comprehensive; these are designed to protect the reciprocal rights of the railroads and the lessee or shipper. It is not practicable to deal with these phases of our subject other than to say that they are the outcome of ripe experience and are intended to protect and to benefit all the parties concerned.

Advantages of the Tank Car

Now let us return to the gains made possible by the employment of tank cars in meeting the diversified needs of industry. The tank car not only tends to offset some geographical handicaps but also aids business development by making possible the shipping of commodities not originally comprehended within the manufacturing scheme of a given plant. This expansion of activities has occurred in a number of instances of late, and it is particularly marked in establishments where processes have been installed for the profitable conversion of certain industrial wastes into widely used, marketable substances. For the sake of brevity we shall refer to only two of these, but they will answer admirably to make our point clear.

Ethyl alcohol, popularly known as grain alcohol, is now produced in enormous quantities from blackstrap molasses and also from certain petroleum derivatives. Plants for the making of ethyl alcohol are today located close to refineries in the midst of, or near, oil fields and likewise at points where the needful molasses can be delivered to distilleries in tank cars—the resulting alcohol in each case being hauled away in tank cars to the consumers. More than 100,000,000 gallons of ethyl alcohol were produced in the United States in 1930. The annual consumption is apportioned mainly as follows:

	Wine Gallons
Anti-freeze	40,000,000
Cellulose industries	25,000,000
Shellac and varnish	8,000,000
Toilet and perfume preparations	5,000,000
Miscellaneous	15,000,000

Ethyl alcohol is a very valuable solvent and has innumerable applications in industrial chemistry and elsewhere; its employment is so extensive that the manufacture of alcohol is classed as a "key industry."

Methyl or wood alcohol was formerly obtained by the destructive distillation of hard wood, and production was carried out in many small plants scattered about in our lumbering districts. Today, on the other hand, most of our methyl alcohol is derived from waste gases issuing from carbide furnaces, corn fermentation vats, and synthetic ammonia plants; the carbide furnaces and the ammonia plants are located, of necessity, near sources of cheap electric energy. The methyl alcohol so produced is transported in bulk in capacious tank cars. Methyl alcohol which used to sell for $1.30 a gallon can now be bought for 40 cents a gallon. During 1930, a total of 10,000,000 gallons of methyl alcohol was produced in the United States, and the output was then on the increase. Methyl alcohol is employed in the making of chloroform, acetic acid, acetone, *etc.*, which are utilized for numerous purposes, for example, in the manufacture of explosives which are used continually in many engineering and industrial undertakings.

The point of economic importance in the recently developed processes for the conversion of waste gases into alcohol is that it would probably have been impracticable to do this on a commercial scale, on which this work is now being done, had not the tank car been available to move the alcohol from the producing plants to worthwhile markets. Numerous other fields of usefulness could be mentioned in which tank cars link out-of-the-way producers with eager consumers and, at the same time, bring about substantial economies and benefits to all concerned, but space here does not permit of elaboration—the fundamental principles involved remain alike or akin.

The Technical Development of the Tank Car

The tank car, like every other modern vehicle, has been the product of an evolution in industry, and for the most part its development has been the consequence of an insistent economic demand. Of late, however, the most progressive of the builders have anticipated demands and have brought the art forward to a point where the potentialities of service have been increased immensely. Until 1903, tank cars—much like Topsy—"just growed," and this growth was somewhat haphazard and uncontrolled by any generally accepted structural standards. Indeed, attention during operation was directed as a rule only to the running gear; if inspection revealed that the running gear was all right, the tank was *assumed* to be sound and fit! At least that was the railroad man's attitude towards the tank car entrusted to his handling.

In 1903, the Master Car Builders' Association faced the situation understandingly and adopted and promulgated certain rules which remained in force, substantially unchanged, until 1916. Those regulations guided tank-car builders and standardized the art along the lines specified but did not put any restraint upon betterments that engineering and inventive minds could conceive. At about the same time, the American Railway Association, the Bureau of Explosives of that association, and the Interstate Commerce Commission devoted study to the tank car, both as a railway vehicle *per se* and as a means of transporting various fluid commodities of which some were inflammable while others developed high pressures when exposed to the hot sun or to any source of heat sufficient to induce gasification.

The protective measures now employed, apart from structural ruggedness commensurate with the needs of the service and the products transported, are means of securely sealing as well as of rapidly emptying; surmounting domes with free space to allow for the expansion of the contained fluids when warmed in transit by exposure to the sun; safety valves and vents that automatically open to permit the escape of gas when more than the prescribed pressures are developed; to facilitate unloading, the installation of steam coils for rendering fluid such commodities as are apt to solidify or thicken when chilled; and insulating coverings that prevent or limit heat interchange between the atmosphere and the contents of the cars—whether the contents be initially cold or hot, according to the requirements of the particular shipment.

Casing-head gasoline came into commercial prominence about 1915. Because of the explosibility of that fuel and the difficulties encountered in confining its high-pressure vapors within the average tank car of that period, Government experts after due research determined how tank cars could be made safe for the carriage of that extremely volatile commodity. The improvements made following those disclosures laid the foundation for many subsequent betterments and, incidentally, the resulting ameliorations opened a far wider field of usefulness to tank cars. Because of the notable advances which have been made at intervals ever since, these tank cars are now carrying increasingly large volumes of liquefied hydrocarbon gases such as butane and propane.

These liquefied gases are making it possible for communities lying beyond the range of the distributing systems of manufactured-gas plants to enjoy all the advantages of gas in the home through tank-car delivery of propane and butane. These gases are highly satisfactory for heating purposes and are, besides, nonpoisonous.

Statistics show how rapidly these liquefied hydrocarbon gases have won recognition since the first tank car for their bulk conveyance was constructed seven years ago. The following figures indicate how, by reason of the service of distribution performed by high-pressure tank cars, these erstwhile waste by-products of the refining of petroleum are being disposed of profitably:

Quantity of Liquefied Gases Marketed

Year	Gallons
1926	465,068
1927	1,091,005
1928	4,522,899
1929	9,925,698
1930	18,017,347
1931	28,502,849

What tank-car engineers and builders have done can be grasped better if one realizes that these vehicles now carry such varied commodities as weed-killing chemicals, wine, water, milk, caustic soda, turpentine, paint, glycerine, chlorine, corrosive acids, liquefied gases, helium, syrups, pickles, sand, cement and hundreds of other dissimilar products. Methods and facilities have been devised so that tank cars may be thoroughly cleaned after discharging their cargoes and made fit for the transporting of other commodities; in this way considerable groups of tank cars are made available for a variety of services. Similarly, there are well-organized plants which specialize in the overhauling and repairing of tank cars, so that the present exacting standards of serv-

iceability can be maintained. These plants may be devoted either wholly or in part to repair work, but a number of them are also tank-car builders.

A tank-car shop contains much heavy, powerful, and more or less special machinery. There are hydraulic riveters and manually operated pneumatic riveters; there are punching machines that bite at one time multiple holes through heavy plating; there are rolls, shears, presses, and furnaces; there are many kinds of other apparatus that lend themselves to the continuous operations employed in making tank-car parts and in forcibly binding them together so that they will be able to withstand the rigorous stresses occurring in railway traffic.

Special Uses of Tank Cars

There are more than fifty different types of tank cars designed and built to satisfy manifold industrial needs. Some cars are wood-lined, some are rubber-lined, and others are lined with glass or enamel. The newest and most novel tank cars are the glass-lined milk cars and the all-aluminum and the nickel-lined cars. The building of the all-aluminum and the nickel-lined cars involved many-sided problems that taxed the ingenuity of metallurgists and rolling-mill engineers. They also presented constructional difficulties to the tank-car builder. However, every puzzling question has been answered successfully, and what was believed to be unattainable is now an accomplished fact. It is regrettable that we cannot tell the story of how the technical difficulties were mastered, one by one. We shall have to be content with the assertion that these new tank cars have greatly broadened the usefulness of this order of vehicle.

The all-aluminum tank car makes it possible to transport alcohol, water-white turpentine, hydrogen peroxide and formaldehyde, without contamination or discoloration while in transit. This condition insures better prices for these products and avoids expenses which would otherwise be incurred by the purchaser when purifying or clarifying them for his purposes. The all-aluminum tank car also lends itself to the carriage of other commodities that would either be impaired or do damage if transported in an ordinary steel tank car. The nickel-lined tank car likewise permits of the hauling of chemicals which are destructive of steel and which, in turn, might be affected by the corroded metal. The economic advantages of the steel-lined car may be gathered from its possible use in serving a single industry.

Caustic soda is used in very large amounts in the rayon and soap industries, but to be acceptable the chemical must not have an iron content in excess of 0.0008%! Until recently one rayon plant has used 50,000 tons of caustic soda annually, and it has been in the solid or fused form, packed in steel drums, and shipped in box cars. This caustic soda, in solution, can now be carried in nickel-clad tank cars at a saving of about $8 for each ton of the chemical.

The refrigerated milk-tank car is a highly developed type capable of transporting 6,000 gallons of milk. A tank car of this sort has a capacity equal to three times that of the usual milk car packed with a multiplicity of 40-quart cans. The advantages of glass-lined milk tank cars are:

A more sanitary handling of milk, resulting in greater safety to the consumer.

Economical cost of operation, both in handling and in freight.

Through an absolute control of temperatures in transit, the receipt of better-flavor and higher-quality milk at destinations.

Cars of this sort widen the territory from which milk bound to metropolitan centers can be drawn. The variation in temperature of one car, after covering a distance of 1,800 miles, in 54 hours—with an atmospheric temperature range of 66 degrees—did not exceed one degree in the milk.

A present climax in the building of high-pressure tank cars was reached when the General American Tank Car Corporation constructed four cars for the United States Navy in which to transport helium from Amarillo, Texas, to Lakehurst, New Jersey, for use in the airships of the nation's fighting fleet. Each tank car carries a nested arrangement of large steel tanks that are strong enough to store in them the buoyant gas at a pressure of 2,250 pounds, and a single car will hold 230,000 cubic feet of helium. Each of the four cars cost $55,000; on every trip a car saves $4,059—reducing to this extent the freight charges previously paid when the helium was shipped in numerous small and heavy steel cylinders. With the entry of the Akron into active service in the air fleet, the Navy was called upon to provide six more of these high-pressure helium tank cars; and the General American Tank Car Corporation has them under construction.

Competitive Factors

In the very beginning of this article it was pointed out that the tank car came into being in an effort to obviate the employment of numerous comparatively small containers—large tanks displacing barrels; for the same reason the use of tank cars has increased greatly in the succeeding decades. Such being the fundamental warrant for the tank car, someone might logically ask: Why should not the pipe line now supplant the tank car? It is well known that pipe lines can transport, in a more or less continuous stream, vast quantities of fluids. As a matter of fact, a considerable number of persons interested in the tank-car business have been apprehensive of the expansion of pipe lines and the widening of the service rendered by them. Pipe lines are in use today for the transporting of crude oil and gasoline. There are about 3,800 miles of gasoline pipe lines in operation and under construction in the United States, and some of these lines are handling gasoline that has previously been in large part hauled in tank cars.

The anxiety of tank-car builders concerning the menace of gasoline pipe lines has generally diminished, if it has not entirely vanished, of late. This changed attitude is the consequence of a more complete grasp of the circumstances controlling the economics of gasoline pipe-line building and operating. Instead of looking upon these pipe lines as a menace, far-seeing builders of tank cars now view the lines as aids in increasing the demand for tank cars, paradoxical as this statement may seem. For the past decade and a half, anywhere from 75% to 90% of the crude oil produced in the Mid-Continent fields has been carried to Chicago refineries through pipe lines. In the Chicago district the crude oil has been refined, and gasoline has been one of the chief products. During the period mentioned, an increasing number of tank cars has been required to transport the gasoline from the Chicago refineries to points of consumption.

Gasoline is only one of a number of commodities resulting from the refining of petroleum, and, no matter where the

refineries be located, these commodities have to be conveyed to various points of consumption or redistribution. During the years that the refineries in or about Chicago have been obtaining their crude oil by pipe lines, tank cars have been employed to carry the resulting lubricating oils, asphalts, tars, liquefied gases, and other by-products to the markets. Virtually no tank cars have been used in hauling crude oil from the Mid-Continent region to Chicago.

The building of gasoline pipe lines to carry that commodity from Mid-Continent refineries to Chicago will necessitate longer hauls of by-products from the Mid-Continent region than was the case when the crude was more generally refined in Chicago; in fact, the opinion now prevails among well-informed persons that tank cars will have to transport these by-products and thus add materially to tank-car mileage. Instead of traveling 200 or 300 miles from a Chicago refinery to a market, the tank cars will now have to cover a thousand miles or more in linking the Mid-Continent refineries with their markets.

The by-products of the petroleum industry are becoming of steadily increasing value, and there appears to be justification for the belief that in the near future they will rank in importance with gasoline. The liquefied fuel-gas industry—that having to do with propane and butane, for example—jumped from 465,068 gallons in 1926 to 28,502,849 gallons in 1931; tank cars are now carrying this commodity from the source to the consumer. Needless to say, it would be impracticable to attempt to move these liquefied gases and other by-products of refined petroleum through pipe lines.

The construction and the maintenance of a long-distance gasoline pipe line is an extremely expensive venture, and depreciation is high. Pumping stations are spaced every 20 miles along the route, and duplicate equipment must be at hand to take over the service in case of any mechanical failure. The fire risk is great. The line must be continually patrolled throughout every section of it because of the danger of leaks and of tapping by unscrupulous persons. The capacity of the line is commonly much larger than current requirements, adding just so much to plant outlay; and, when all the factors enumerated have been allowed for, it must be remembered that a pipe line provides only a one-way service and as a rule can carry only one kind of commodity. In this particular it differs radically from a tank car, which can be moved in any direction that rails permit and which may be used, after cleaning, for conveying other commodities.

Consideration of the competitive relations between tank cars and pipe lines has recently been touched upon in a report issued by the Standard Statistics Company, Inc., in a review of the railroads of the United States. It might be worth while to refer to extracts from that publication because its viewpoint is not that of persons engaged in the building and the operating of tank cars. The report states that the proportion of crude oil handled by railroads is relatively infinitesimal; as a matter of fact, on the three important petroleum-carrying roads the aggregate shipments amount to only 5% of their total traffic. On the other hand, petroleum derivatives, other than gasoline, are moved well-nigh entirely by the railroads. The report emphasizes the outlook in this manner: "Every gallon of refined gasoline that moves by pipe line will come back to the railroad if the rates are lower than those published

by the pipe-line company. The railroads will some day publish rates for refined petroleum in trains of fifty cars or more, and there is not a pipe line in the country, and there never will be a pipe line in the country, that can compete with the railroad on such a basis . . . Pipe lines will not be constructed to every railroad station in the United States."

From the same report comes this suggestive prophecy: "The Interstate Commerce Commission will eventually allow lower rates by rail than by pipe line, even if such rates may jeopardize the position of pipe-line companies as a public convenience and necessity. It is more important to save the railroads than the pipe lines, and the latter will have to go through the long period of development that has characterized the railroad industry for fifty years. If funds have been expended for the construction of pipe lines without regard to fundamental economies, there is no reason why the public or the railroad should suffer from a rate structure which is too high, simply as a result of a transportation agency designed to haul one particular commodity."

Without discussing points in the foregoing extracts that might reasonably be viewed as controversial by some people, it will be generally recognized that certain of the statements are not debatable. These facts make it reasonably clear that, largely because of the adaptability and the mobility of the tank car, tank cars and pipe lines, in the last analysis, have broadly two distinct fields of service.

Summary and Conclusion

As has been outlined in this article, the evolution of the tank car was a slow one for a good many years; then tank-car builders and shippers began to find other uses to which tank cars could be put advantageously. In this way, the field of service was broadened but still much more restricted than the potentialities of this type of vehicle warranted. Only within the last few years have the designer and the builder of tank cars made their most significant advances, and these achievements provoke the query: What will tank cars be called upon next to do? The designer, the metallurgist, the industrialist and the builder are collaborating to an extent heretofore not contemplated, and this combining of skill and interests is very suggestive.

A Canadian company has been formed which is to specialize in the building and leasing of tank cars. The company is to operate throughout the whole of the Dominion, and its principal customers will be oil companies and shippers of molasses, chemicals, alcohol, tar oil and other products. According to the *Financial Journal* of Philadelphia, the reason for the formation of the new company is a ruling by the Canadian Railway Commission. That body prescribed that tank cars should be owned or leased by shippers and no longer supplied by railways themselves. Before that ruling, the Canadian Car & Foundry Company, Ltd., had begun to build tank cars in anticipation of the new demand. So much for the attitude of a neighboring country, which has profited by our example and is equally intent upon providing for itself approved means of handling fluid commodities in bulk.

In conclusion, let us bear in mind that the tank cars in the United States are weaving their way throughout the whole industrial fabric of our national life, like so many speeding shuttles, and in doing so they are forming a pattern that is symbolic of their varied, valuable and far-flung service.

LEGAL ASPECTS OF THE PROPOSED REGULATION OF THE RAILROAD HOLDING COMPANY

By WALTER M. W. SPLAWN

SHALL the railroad holding company be subject to regulation? The Interstate Commerce Commission says that such regulation is necessary to a proper performance of duties already assigned to it by Congress.[1] Officials of railroad holding companies assert that the railroads can be adequately regulated without extending the jurisdiction of the Commission to include the activities of holding companies. The Commission points out that the holding company, through stock ownership and control of the operating companies, may fix policies and determine the course of action for operating officials.[2] The holding companies reply that they are interested in investments, and that their interest is simply that of an investor.

Early Holding Companies

A holding company may be defined as any company which, by virtue of its ownership of securities, is in a position to control or substantially to influence the management of one or more other companies. An investment company, on the other hand, buys securities as any investor would do without any thought of determining the policy of the management.

The holding company is of recent origin and development. There are examples of corporations authorized by state legislatures to acquire stock of other companies before the middle of the nineteenth century. Between the years 1868 and 1872 the legislature of Pennsylvania granted charters by special acts to more than forty corporations, authorizing each company to hold and own securities of other companies.

By 1881, the Western Union Telegraph Company had acquired stock interests and, in most cases, a majority of the voting stock in other telegraph companies and, by that means, had gained control of its most important competitors. In the railroad field, the Pennsylvania Company, chartered in 1870, is perhaps the first case on record of a pure holding company. From 1887 to 1893 the State of New Jersey took action which pointed the way to authorization of corporations to acquire and deal in the securities of other companies by authority of the general corporation laws of the state.

Prior to this action by New Jersey no state had allowed a company organized under its corporation laws to hold

[1] "In section 5 of the Interstate Commerce Act, Congress has manifested a clear purpose to place the consolidation or unification of the railway properties of the continental United States into a limited number of systems completely under the control of the commission . . . Experience has shown, however, that as it stands, section 5 does not accomplish that result. On the contrary, unifications may be, and in important instances have been, effected without any supervision whatever by the commission." Testimony of Commissioner Joseph B. Eastman in hearings before the Interstate and Foreign Commerce Committee, House of Representatives, on "Regulation of Railroad Holding Companies," 72nd Congress, First Session, p. 48.

[2] Testimony of Commissioner Joseph B. Eastman in hearing on "Holding Companies, Investment Trusts, *etc.*," 71st Congress, Third Session, pp. 39, 40 and 50.

stock in other corporations. In fact, some states definitely forbade intercorporate holding. In the majority of cases where early incorporation laws made no mention of this matter, the question whether or not a company had implied power to hold stock was sometimes referred to the courts. In most of the states it was held that with certain exceptions corporations had no such implied power, the decisions being based largely on the ground that the purchase of stock in a second corporation involved the investment of funds in a new and distinct enterprise. This was an investment not contemplated by the stockholders of the purchasing company and was foreign to the objects of its creation.

States began to follow the lead of New Jersey in permitting corporations to own stock in other companies. But a temporary check to the use of the holding company came in 1904 by reason of the decision of the Supreme Court in the Northern Securities case.[3] In 1911 the Supreme Court, in deciding the cases against the Standard Oil Company[4] and the American Tobacco Company,[5] had definitely checked combinations seeking complete monopoly. The Clayton Act in 1914 outlawed a particular form of combination by making it illegal for a corporation to acquire the stock of another company engaged in interstate commerce, where the acquisition might result in a substantial lessening of competition or any restraining of commerce or any tendency toward the creation of a monopoly. Less than one-third of the leading industrial combinations of the country are now held together by holding companies, more than half of which have been formed since 1920.

"Pyramiding," or the use of a chain of holding companies to enable those at the top to keep control with a minimum of investment, is not the practice in the industrial field. The tendency is for the industrial holding company to acquire practically all of the stock of its subsidiaries. There are a number of instances where the holding company has continued acquisition of minority interests long after it has acquired a substantial majority. This is also true of the banking holding company. In the fields of industry and banking we do not find that the holding company is ordinarily used for pyramiding.

There are many who sincerely regret that states ever adopted the policy of legally authorizing a corporation to buy the stocks of another corporation.

Holding Companies as a Factor in the Ownership and Control of Railroads

There is a large group of companies which are subsidiaries of railroad corporations and which are used to hold the securities of other railroads and of other carrier and noncarrier companies.

First, there is a small group of jointly controlled holding companies.

The most important holding companies jointly controlled by railroads are as follows:

(Figures in parentheses indicate percentage of total voting power)

Richmond-Washington Company:
Controlled by—
- Atlantic Coast Line Railroad Co. (16.67)
- Baltimore & Ohio Railroad Co. (16.67)
- Chesapeake & Ohio Railway Co. (16.67)
- Pennsylvania Railroad Co. (16.67)
- Seaboard Air Line Railway Co. (16.67)
- Southern Railway Co. (16.67)

[3] 193 U. S. 197.
[4] 221 U. S. 1.
[5] 221 U. S. 106.

Interest in—
Richmond, Fredericksburg & Potomac Railroad Co. (52.12)
Richmond, Fredericksburg & Potomac Transportation Co. (interstate bus operations) (100)
Richmond-Greyhound Lines, Inc. (interstate bus operations) (100)
Richmond Land Co. (100)
Fruit Growers Express Co. (4.02)
Southwestern Construction Company:
Controlled by—
Baltimore & Ohio Railroad Co. (36.59)
Southern Railway Co. (15.79)
Alabama Great Southern (all of its stock is held by Southern Railway Co.) (47.58)
The National Investment Co. (all of whose stock is held by the Southern Railway Co.) (0.03)
Interest in—
Cincinnati, New Orleans & Texas Pacific Railway Co. (68.54)
Harriman & Northeastern Railroad Co. (100)
Fruit Growers Express (1.46)

In addition to the group of jointly controlled holding companies, there are three other groups of holding companies which are subsidiaries of railroad companies:[6]

1. Companies which hold primarily the securities of other railroads;
2. Companies which hold primarily the securities of carriers other than steam railroads;
3. Companies which hold primarily the securities of noncarrier corporations.

Of the thirty-six companies included in the first group of subsidiaries of Class I Railroads, seventeen are active railroad companies, twelve are companies which come within the technical definition of a holding company, three are lessor companies, and four are noncarrier companies.

[6] There are a great many holding-company subsidiaries to railroads falling in one or another of these three groups. A complete list is shown on pages XXXIV and XLVI, inclusive, of House Report No. 2789, 71st Congress, Third Session.

With a few rather important exceptions it may be concluded that the financial structures of holding companies of the first group are simple and that the purposes in using such companies are those of segregating assets, escaping the full regulation of the Interstate Commerce Commission's inspection of accounting, conforming to state laws, and possible use as temporary depositaries of stock, much as a suspense account, pending final disposition.

Of the eighteen companies which hold primarily the securities of carriers other than steam railroads, four are holding or investment companies, five are operating steam railroads, one a lessor steam railroad, five are street-railway, motor, or other carriers, and three are noncarrier companies.

There are thirty-two companies which hold primarily the securities of noncarrier corporations. Of these, eight are coal companies, twelve are operating or lessor railroad companies, five are real-estate companies, one is a holding company, and six are miscellaneous companies. Most of the coal companies have only one or two subsidiaries. One such holding company is the Nickel Plate Development Company, wholly controlled by the New York, Chicago & St. Louis Railway Company, and it is the holder of the entire capital stock of one realty company. Other controlled companies are engaged in lumbering, quarrying, warehousing, hotel, supplying water, manufacturing, compressing, stockyard, oil and pipe line, and other operations.

In addition to the foregoing is a group of holding companies set up by interests other than the railroads themselves and which have substantial or controlling interests in one or more Class I railroads.

The most important of these are the Van Sweringen Holding Companies, which are considered at length in the House Report beginning on p. 820. The thirty-two corporations there accounted for may be classified as follows:

(a) Existing holding companies owning securities of common carriers or of other such holding companies:
   1. The Chesapeake Corporation.
   2. Alleghany Corporation.
   3. General Securities Corporation.
   4. Geneva Corporation.
   5. The Pere Marquette Corporation.
   6. Virginia Transportation Corporation.
   7. Van Sweringen Corporation.
   8. The Vaness Co.

(b) Existing holding company operating under lease coal properties controlled by common carriers:
   The Pittston Co.

(c) Existing company operating steamline common-carrier terminal facilities:
   The Cleveland Union Terminals Co.

(d) Existing holding company owning securities of electric traction companies:
   Metropolitan Utilities (Inc.).

(e) Existing companies operating electric traction facilities:
   1. The Cleveland Interurban Railroad Co.
   2. The Cleveland & Youngstown Railroad Co.
   3. The Traction Stores Co.
   4. The Cleveland Traction Terminals Co.

(f) Existing real estate, terminal building, and hotel companies:
   1. The Van Sweringen Co.
   2. The Shaker Co.
   3. The Terminal Building Co.
   4. The Terminal Properties Co.
   5. The Cleveland Terminals Building Co.
   6. Building Arts Exhibit (Inc.)
   7. The Huron-Fourth Co.
   8. The Heights Co.
   9. The Long Lake Co.
   10. The Terminal Hotels Co.

(g) Holding companies, dissolved prior to January 1, 1929, previously owning securities of common carriers:
   1. Nickel Plate Securities Corporation.
   2. The Western Co.
   3. The Clover Lead Co.
   4. Special Investment Corporation.

(h) Real estate and construction companies dissolved prior to January 1, 1929:
   1. The Terminal Realty and Securities Co.
   2. The Sedgewick Land Co.
   3. The Woodhill Construction Co.

The holdings of the Alleghany Corporation as of April 30, 1930, were as follows:

	Number of Shares	*Per Cent* of Total Voting Power
Alleghany Corporation:		
New York, Chicago & St. Louis R. R. Co....	100,000	29.67
Chesapeake & Ohio Ry. Co.....	32,925	2.22
Erie Railroad Co.....	215,000	7.52
Missouri Pacific R. R. Co.....		
Common.....	482,100	
Preferred.....	192,300	
Total.....	1,022,325	66.11
Alleghany Corporation:		
Kansas City Southern Ry. Co.....	106,100	20.82
Great Northern Ry. Co. preferred.....	11,500	.46
Atchison, Topeka & Santa Fe Ry. Co....	8,500	.23
Buffalo, Rochester & Pittsburgh Ry. Co....	1,120	.68
New York Central R. R. Co.....	6,700	.13
Wheeling & Lake Erie R. R. Co.....	4,000	1.00
Geneva Corporation:		
New York, Chicago & St. Louis R. R. Co....	68,100	20.20
Erie R. R. Co., second preferred.....	10,900	0.38
Chesapeake Corporation:		
Chesapeake and Ohio Ry. Co.....	814,600	54.81
Pere Marquette Ry. Co.	19,500	2.84

On March 25, 1932, the holdings were, according to counsel for the Van Sweringens:

	Shares
The Chesapeake Corporation: Chesapeake & Ohio Railway Co., common	4,066,508
Alleghany Corporation:	
The Chesapeake Corporation, common	1,248,900
Lehigh Coal & Navigation Co., common	33,546
Missouri Pacific R. R. Co., common	522,900
Missouri Pacific R. R. Co., preferred	194,100
Pittston Co., common	496,240
Erie Railroad Co., common	215,000
New York, Chicago & St. Louis R. R., common	167,300
Virginia Transportation Corporation:	
Erie Railroad Co., common	769,800
Erie Railroad Co., first preferred	151,405
Erie Railroad Co., second preferred	60,195
New York, Chicago & St. Louis R. R. Co., common	25,100
Chicago & Eastern Illinois Ry. Co., common	131,268
Chicago & Eastern Illinois Ry., preferred	64,904
The Pittston Co., common	381,250
Standard Carloading Corporation, common	450

The above type of holding companies which exercise or participate in the control of railroads and which are not themselves members of the railroad family is not a very extensive one, but it includes several companies which control or substantially control vast networks of railroad lines. The majority of these companies are of recent origin and owe their genesis to a number of causes. Some, however, such as the Atlantic Coast Line Company, the Lehigh Coal & Navigation Company, and one or two smaller companies, are deeply rooted in the past, and the special considerations which contribute to the organization of holding companies of today do not go far to explain their organization. The early holding company issued no nonvoting stock, the only nonvoting capital at their disposal being that raised through the issuance of funded debt or similar obligations.

It may be stated that the holding companies which have been organized in recent years owe their organization in the main to:

1. An effort to secure control of properties with relatively smaller contributions of capital than would otherwise be necessary, as by means of successive issues of stock, much of it without voting power, and the issuance of bonds secured by pledged stock;
2. A desire to secure freedom of action with respect to the issuance of securities and the acquisition of properties beyond the control of the provisions of the Transportation Act of 1920;
3. A wish to take advantage of the corporation laws of certain states;
4. An effort to make more convenient the holding of large personal fortunes or the interests represented by an estate; and
5. Considerations of meeting the requirements of State and Federal Acts, or the placing of certain activities beyond the reach of regulatory bodies.

The Railroad Holding Company Bill

At the request of the Interstate Commerce Commission the House of Representatives passed a resolution calling for an investigation of the ownership and control of railroads.[7] Under the authority of this resolution the House Committee on Interstate and Foreign Commerce made a comprehensive and searching study of the relations of holding companies to railroad operating companies, particularly with respect to the effect upon consolidation. The report[8] growing out of this investigation contained the following recommendations:

(1) That railroad holding companies shall be regulated.

(2) That at the next session of Congress the Committee shall give consideration as to whether or not legislation is necessary to deal with any past acquisition or control of railway properties, such as are discussed in the report and which have not had the approval of the Interstate Commerce Commission as in the public interest.

[7] House Resolution 114, 71st Congress, 2nd Session.
[8] See footnote 6.

In its Annual Report, December, 1931, the Interstate Commerce Commission quoted these recommendations and made certain suggestions as to the desirability of regulating the accounts and issue of securities of railroad holding companies, and of providing for divestment of stock as necessary to prevent unauthorized combinations.

In line with these recommendations, Chairman James S. Parker on February 21, 1931, introduced a bill providing for the control of railroad holding companies with reference to their activities in effecting the future combinations of two or more railroad companies. On February 9, 1932, Chairman Sam Reyburn introduced H. R. 9059, which added to the provisions of the Parker Bill among other things a paragraph calling for divestment of stock which might have been acquired in the past, but not prior to February 28, 1920. Both bills were drafted with care. The Parker bill contained language adequate to place acquisition of control of two or more railroads in the future under the regulation of the Interstate Commerce Commission. The pertinent language of that bill is retained in the Rayburn Bill. After an additional year of study on the part of members of the Committee, and in the light of further recommendations of the Interstate Commerce Commission, the bill was somewhat broadened in its scope:

(a) To facilitate under the jurisdiction of the Commission the consolidation of railroads. This was accomplished by substituting a new paragraph in the bill for the existing paragraphs (2) and (6) of Section 5 of the Act. Definite specifications were also made with reference to the supervision of accounts and securities of such holding companies as the Commission might authorize to acquire control of any carrier.

(b) There was added what turned out to be the most controversial provision, paragraph (6) of the bill, which undertook to empower the Commission after notice and hearing to investigate and determine whether the holding by any person of any part of the stock of any railroad is or is likely to be the cause of preventing or hindering the carrying out of any part of the railroad-consolidation plan or impairing the independence, one of another, of the systems provided for in such plan, by reason of subjecting such carrier to the control, domination, or influence of another carrier.

In a word, if the Rayburn Bill should become law, paragraph (1) of Section 5 of the present act would be wholly unchanged; this is the paragraph that has to do with pooling and which gives the Commission power to authorize pooling and division of rates. Paragraphs (4) and (5) of the present law are those which contain the substantive provisions concerning consolidation. The Rayburn bill makes no change in those provisions, but would renumber them as paragraphs (2) and (3). Paragraphs (2) and (6) of the present law are eliminated and their substance is combined in a new paragraph (4) of the bill, which reads as follows:

(4) It shall be lawful, under the conditions specified below, but under no other conditions, for two or more carriers to consolidate or merge their properties, or any part thereof, into one corporation for the ownership, management, and operation of the properties theretofore in separate ownership; or for any carrier, or two or more carriers jointly, to purchase, lease, or contract to operate the properties, or any part thereof, of another; or for any carrier, or two or more carriers jointly, to acquire control of another through purchase of its stock; or for a corporation which is not a carrier to acquire control of two or more carriers through ownership

of their stock; or for a corporation which is not a carrier and which has control of one or more carriers to acquire control of another carrier through ownership of its stock.

The provision in the last two clauses of the bill is not in the present law; it would make lawful under certain conditions the control of carriers by holding companies.

What are the conditions under which the carriers may consolidate or merge, enter into contracts for the leasing of properties, acquire control through stock ownership, or combine in various ways? These conditions are set out in subparagraphs (A), (B), (C) of paragraph (4) just quoted. They are:

(A) that the proposed consolidation . . . or acquisition of control shall be in harmony with and in furtherance of the plan for the consolidation of railway properties established pursuant to paragraph (3). (Paragraph (3) of the bill is now paragraph (5) of the law.)

(B) that after notice and hearings there shall be a finding that the proposed grouping is in the public interest.

(C) in the event that a holding company is authorized to acquire or to control two or more railroads, the holding company itself will then become subject to the Interstate Commerce Commission for the policing of its accounts and the issuance of its securities just as though it were itself a carrier.

Paragraph (5) provides that it would be unlawful for any individual, partnership, association or corporation to accomplish the control or management of a common interest of two or more carriers, unless such common control or management were approved under paragraph (4).

Paragraph (6) would authorize the Commission under certain circumstances to order divestment of stock, where the stock was found to be used in such a way as to subject one carrier to the control of another, or two or more carriers to common control.

Consideration of the Bill

Hearings on the bill were held beginning February 17 and closing March 24, 1932.[9] At the hearings the Interstate Commerce Commission appeared, through the Chairman of its Legislative Committee, as unanimously supporting the bill.[10] The National Industrial Traffic League, representing shippers' organizations, also gave testimony in behalf of the measure, as did certain officials and citizens from Boston, Massachusetts.[11] Appearing against the bill were representatives of, and those speaking for and with, the most powerful railroad holding companies.[12]

The object of the bill is to supplement the provisions of Section 5 of the Interstate Commerce Act. This is done by recognizing the fact that a plan for the consolidation of railroads has been published, and by adopting appropriate measures calculated to prevent consolidations, unifications, and acquisitions of control by railroads from being effectuated and maintained in such manner and under such circumstances as will defeat this published plan. The provision of this plan is the basis of the public policy established by Congress with respect to railroad consolidation.

In connection with paragraph (4) of the bill, the Commission pointed out

[9] Hearings, 72nd Congress, First Session, pp. 1 to 287.

[10] "Now, with respect to the bill which is before you, H. R. 9059, since the time of my last appearance, that has been submitted to the entire commission and considered in conference together with the statement which I made before this committee, and I am now authorized to say that H. R. 9059 is unanimously approved by the commission." Testimony of Commissioner Joseph B. Eastman, Hearings, 72nd Congress, First Session, p. 238.

[11] *Ibid.*, pp. 85, 104, and 110.

[12] *Ibid.*, pp. 115, 133, 162, 171, 188, 209 and 285.

to the Committee that unifications are now being accomplished very largely in the two least desirable ways, either through purchase of stock or through leases. One of the worst features of the railroad situation from the financial point of view is the extent to which the properties have been mortgaged and the heavy load of fixed charges which they carry. Ordinarily a lease has the disadvantage of converting a contingent return on stock into a fixed rental charge. Acquisitions of control through stock purchase are also very likely to result in an increase in fixed charges, because the average railroad can procure cash for such purchases, in the long run, only by selling bonds. Under this bill it would be possible for the directors of two or more railroads to agree upon the terms of union and to submit a plan to the stockholders for their approval, accompanied by a complete and convincing statement of the advantages to be gained. Such a plan could take the form of a consolidation, a merger, or a purchase of properties, and in that event it could be accomplished without any substantial expenditure of cash or increase in debt through an exchange of stock in appropriate ratio.

The testimony in behalf of the bill was along the following lines. The holding-company operations have had the result of bringing certain railroads under common control, or under the influence of other railroads, without the approval or supervision of any public body. The question was asked whether what they have done has been inconsistent with the public interest; Commissioner Eastman replied that that seemed to him immaterial for present purposes. Congress has undertaken to bring the process of railroad unification under public control. Once a policy is adopted it ought to be enforced. At present there is no effective control. It is clear that unifications can be accomplished without public supervision and regardless of what the public interest may be.

Emphasis was placed upon the possibility of interfering with the independence, one of another, of the systems provided for in the law. The present law gives the Commission a mandate to authorize grouping of the railroads of the continental United States into a limited number of systems. The position was taken that it was assumed that these systems would be independent one of another. It was then pointed out that the Alleghany Corporation now owns a majority of the voting stock of the Missouri Pacific, a system west of the Mississippi River. There is also much in the record concerning the activities of the Pennsylvania Railroad Company and its subsidiary and affiliate holding companies in acquiring the stock of the Boston & Maine and the New Haven. In the Commission's complete plan, published in 1929, the Boston & Maine is in System No. I and the New Haven in System No. II. It has been assumed that each of these systems would remain independent of the other and of the systems to the west.

There was some question as to the power of Congress to reach the holding company which is itself not an operating company; that is to say, it is not a company engaged in transportation. If Congress may foster, protect and control interstate commerce, with appropriate regard both to the railroads and to the public at large, and promote its growth and insure its safety, it seems certain that the object of the proposed legislation; namely, the protection and furtherance of the public

policy as to interstate railroad consolidations, unifications, and acquisitions of control, is within the constitutional power of Congress.[13]

The opponents of the bill raised several legal questions without citing many authorities in support of the position they took. These objections in the main were: Congress could not give the Commission power to say whether it is in the public interest for stock in a railroad to be owned by a particular person, or for railroads to be acquired or consolidated. In reply it was said that the public interest is one of the tests laid down in the proposed paragraph (4) to guide the Commission in determining when to approve consolidations, mergers, and acquisitions of control. In order to support the contention that there is an unconstitutional delegation of legislative power in this provision it must be shown that this standard, namely the public interest, is too indefinite. No authority was cited to show this.[14] The public interest is used as a standard in paragraphs (2) and (6) of Section 5 of the Interstate Commerce Act. The provision of the bill is an expansion and enlargement of those very provisions of the Act.

Another somewhat related point was raised that the bill would be invalid as vesting judicial functions in an administrative agency. Again no authorities were cited to support that contention. It appears that Congress may clothe an administrative agency with functions of a judicial or at least a quasi-judicial character, if the exercise of these functions is incidental to the exercise of its administrative powers.[15]

Paragraph (6) provides for the divestment of stock where it might be used to set up a combination of railroads in defiance of the Commission. In considering this paragraph, much confusion was introduced into the discussion, largely through failure to recognize how closely the paragraph is related to the plan of consolidation which the Commission is called upon, under the present law, to work out. It was contended that this bill should be called "a bill to regulate the ownership of stock in railroads," implying that it contains provisions for arbitrary regulation of stock ownership, and ignoring the fact that the respect in which stock ownership in railroads is sought to be controlled is exceedingly narrow and closely tied up with the basic purpose of preventing the defeat of the consolidation plan. It was further argued that the logical result of doing what Congress proposes to do in this bill would be to permit Congress to say who may own oil wells and who may engage in other private enterprises. These arguments have no application to the bill, because a careful reading of it discloses that it contains no such sweeping and arbitrary provisions. Actually, the bill provides for divestment of voting power only in cases where the holding of stock is or is likely to be the cause, in whole or in part, of preventing or hindering the carrying out of the consolidation plan

[13] *Gibbons* v. *Ogden* (1824), 9 Wheat. 1; *Brown* v. *Maryland* (1827), 12 Wheat. 419; *Gloucester Ferry Co.* v. *Pennsylvania* (1885), 114 U. S. 196; *Houston & Texas Ry. Co.* v. *United States* (1914), 234 U. S. 342; *Dayton-Goose Creek* case (1924), 263 U. S. 456.

[14] On the contrary, principal cases in this field of the law are as follows: *Field* v. *Clark* (1892), 143 U. S. 649; *Buttfield* v. *Stranahan* (1904), 192 U. S. 470; *Mutual Film Corporation* v. *Ohio Industrial Commission* (1915), 236 U. S. 230; *Hampton* v. *United States* (1928), 276 U. S. 394.

[15] *Louisville & Nashville R. R. Co.* v. *Garrett* (1913), 231 U. S. 298; *Ex parte Bakelite Corporation* (1929), 279 U. S. 438; *Crowell* v. *Benson* (1932), — U. S. — 52 S. Ct. 285.

or impairing the independence of the systems provided for in such plan, by reason of subjecting one carrier to the control, domination, or influence of another carrier.

Congress has power to require divestment of stock in order to effectuate a valid policy. It has been done with the approval of the courts under the Clayton Act.[16]

It was also suggested that paragraph (6) would be subject to the constitutional prohibition against *ex post facto* laws. It seems clear that the two elements necessary to make a law *ex post facto* are absent in the bill. *Ex post facto* laws are those which apply new criminal punishments to acts done in the past.[17] The provision in question does not apply to any acts done in the past. It does not make the act of acquiring stock accomplished in the past unlawful. It provides that stock shall not be held in the future in such a way as to defeat the policy of Congress. It thus applies to the future, not to the past. With respect to the question of criminal punishment, which must exist if the *ex post facto* prohibition is to apply, the provision is unobjectionable, for it is regulatory, rather than penal, in character.

Again the paragraph is objected to as being retroactive. Even if it were, that view would not in itself be ground for a holding of unconstitutionality. Though the provision would affect a right acquired in the past, it is proper to do this in furtherance of a valid legislative policy. Congress has in the past, by legislation which has been held valid, cut down or destroyed rights which had been lawfully acquired prior to the passage of such legislation.[18]

It was urged that ownership of stock does not constitute interstate commerce, and that the power of Congress can be exercised only with respect to a subject matter which is in interstate commerce or bears a substantial relation to interstate commerce. The case of *Northern Securities* v. *United States*[19] was cited in support of the contention that Congress may not enact the proposed paragraph (6) because the ownership of stock in railroads is not interstate commerce, and because the paragraph does not deal with a subject of interstate commerce. Reliance upon this case appears somewhat surprising, because the case would seem clearly to establish that the ownership of stock in railroads by a holding company is a subject with which Congress may deal for the purpose of effectuating its policy with respect to interstate commerce. Congress may regulate matters which are not themselves interstate commerce, because of their relation to and influence upon interstate commerce.[20]

Another objection was to the effect that the bill introduced the general question of consolidation, and the consolidation plan is a central feature of the Congressional policy as now set forth in Section 5 of the act to regulate commerce. The provisions of the Rayburn Bill were merely linked to that policy. If the policy should subsequently be changed, the provisions of the bill could be linked to the new policy. The bill merely takes the policy which now exists and follows it.

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[16] *Standard Oil Co.* v. *United States* (1911), 221 U. S. 1; *United States* v. *American Tobacco Co.* (1911), 221 U. S. 106.

[17] *Calder* v. *Bull* (1798), 3 Dall. 336; *Johannessen* v. *United States* (1912), 225 U. S. 227.

[18] *Louisville & Nashville Railroad Co.* v. *Mottley* (1911), 219 U. S. 467; *Addyston Pipe & Steel Co.* v. *United States* (1899), 175 U. S. 211.

[19] (1904) 193 U. S. 197.

[20] *Interstate Commerce Commission* v. *Goodrich Transit Co.* (1912), 224 U. S. 194; *United States* v. *Ferger* (1919), 250 U. S. 199.

The Committee on Interstate and Foreign Commerce in executive session, after the public hearings had closed, decided to eliminate the proposal to authorize the Commission to compel divestment of ownership stock, and substituted therefor a provision to enable the Commission to enter an appropriate order forbidding the voting of stock to bring about groupings which had not been approved under the proposed paragraph (4).

On April 28, 1932, the Committee ordered that there be reported out the Holding Company Bill combined with another bill to amend Sections 15a and 19a of the Interstate Commerce Act.[21] The report, combining the proposals to regulate holding companies and to repeal the recapture of excess earnings, was filed on May 7. The Committee on Rules of the House did not act to give a rule, it was said on account of opposition to some features pertaining to repeal of recapture of excess earnings. Thereupon the Committee separated the Holding Company Bill from the Bill to Repeal Recapture and reported them out separately on May 19, 1932.[22]

Senator James Couzens introduced a bill to regulate the transportation of persons and property in interstate and foreign commerce by motor carriers operating on the public highways.[23] In this bill Senator Couzens incorporated substantially the provisions of the Rayburn Bill to regulate holding companies. After the House Committee separated the Holding Company Bill from the Bill to Repeal Recapture, Senator Couzens introduced a separate bill[24] to Regulate Holding Companies which is almost identical in language with the one reported out by the House Committee. Both of these bills introduced by Senator Couzens are now before the Committee on Interstate Commerce, of which he is the Chairman.[25]

[21] H. R. 11677, 72nd Congress, 1st Session.

[22] H. R. 11643 (Holding Company Bill), H. R. 11642 (Repeal of Recapture), 72nd Congress, 1st Session.

[23] S. 2793, 72nd Congress, 1st Session.

[24] S. 4600, 72nd Congress, 1st Session.

[25] May 27, 1932.

COOPERATIVE ADVERTISING THROUGH TRADE ASSOCIATIONS

By NEIL H. BORDEN

IN recent years, frequent references have been made in advertising circles to the rapid growth of cooperative advertising through trade associations with forecasts of a growing volume of such advertising. For rhetorical purposes these increases have sometimes been couched in terms of percentage. For example, consumer-magazine advertising expenditures of this type at the peak in 1929 were approximately 1,250% of those in 1916;[1] such a figure loses somewhat its force, however, when we consider that it is based on the small sum of $498,000 and that the 1929 outlay in magazines was only $6,200,000, a tidy amount, but not particularly impressive in these days of large advertising expenditure. Under the stress of depression, 1930 magazine expenditures dropped to $4,875,000, while the 1931 total—not yet available—undoubtedly will show a still further reduction.

I recently had occasion to study some twenty case records of advertising and promotional programs carried on cooperatively by business groups, mostly established trade associations. In this study an attempt was made to determine, as far as possible, such generalizations as might be of help in determining the probable success of such cooperative programs. At the same time, the difficulties surrounding such group efforts became apparent, and I have carried away from my investigation the distinct feeling that, although such cooperative advertising and promotion have considerable promise for their backers when well conceived and rightly conducted, much of the cooperative advertising of the past has been of questionable value. Certainly many campaigns involving a considerable expenditure should never have been launched. Their backers failed to appraise properly the promotional opportunity. The difficulties of securing effective cooperation and economical management, the questionable return on purely educational advertising, and the wastes incurred in past campaigns are important factors operating against any great extension of such advertising.

The first part of this article will point out the economics underlying cooperative promotion and advertising, that is, the character of demand; the second section will include certain basic considerations involved in estimating the opportunity of a group of manufacturers to stimulate demand for a product; and the third will deal briefly with some of the more important problems met in the actual conduct of cooperative advertising and promotional efforts.

I. *The Economics of Cooperative Promotional Efforts—The Character of Demand*

In recent years, intense competition between industries and quickening shifts, either up or down, in the demand for the products of different industries

[1] Based on figures taken from annual volumes of *Leading Advertisers*, Curtis Publishing Company, Philadelphia, Pennsylvania.

have brought to the fore fresh realization that there are two forms of competition: first, that which goes on among competitors in a particular industry, which we may term the competition for *selective demand*—that is, selection on the part of consumers between different brands or sources of supply; and, second, that which occurs between different industries, which we may term competition for *primary demand*—namely, an attempt to secure for each particular industry a greater share of the purchasing power of the community.

The demand for any product arises from the utility of that product to individuals in the market. Each consumer has pressing in on him numerous wants which he desires to gratify. His separate demand for each of many different products is determined by the character of his many wants and by his income. In purchasing to fill these wants, the individuals within a market create a combined demand which we may term the *aggregate demand* as contrasted with the demand of any individual.

The purchasing power of most individuals is limited. Everyone ordinarily has to exercise choice among the wants which he is to satisfy and to determine the extent to which he will satisfy his various wants. At any given time the individual consumer, driven by the necessity of apportioning his income among purchases to satisfy his various wants, has for each type of product a demand curve. That is, he has a schedule of the amounts of each which he will purchase at various market prices. The individual consumer's demand curve for a product is determined by the utility of successive units of that product to him. It is affected, on the one hand, by the *law of diminishing utility*, which is a recognition of the fact that the additional benefit which he derives from a given increase of his stock of a commodity diminishes with every increase in the stock already in his possession. On the other hand, it is also governed by the strength of his desire for other products, because purchase of one thing at a given time ordinarily means the foregoing of another thing.

The term "marginal purchase" has been given to describe that unit of a commodity "which he (the prospective buyer) is only just induced to purchase because he is on the margin of doubt whether it is worth his while to incur the outlay necessary to obtain it. The utility of his marginal purchase may be called the marginal utility of the thing to him."[2] Theoretically, in our present money economy, the individual will adjust his expenditures for different types of products so that a dollar spent on one type will give the same marginal utility as that spent on other types. Numerous products which he might want are foregone because he chooses to spend his income on products which have a greater utility to him.

Another important element in the orthodox economists' concept of demand is embraced in the term "elasticity of demand." This term refers to the degree of diminution, as expressed by price, in the demand for additional quantities of a commodity. The economists recognize that the elasticity of demand was low for products with which people are quickly satiated, such as salt, but high for other articles for which satiety does not set in so quickly; for example, oranges. Furthermore, it is realized that the elasticity of demand for different prod-

[2] Marshall, Alfred, *Principles of Economics*, 8th ed., Macmillan & Company, London, 1920, p. 93.

ucts varies with different classes of society, for it is necessary to think of price always as relative to the buying power of the individual. Although variations in price will affect the amount of purchases for different individuals in varying degree, the market as a whole will show a trend which is responsive to price changes.

In their discussions of demand, the economists have usually held *in status quo* factors other than quantities and prices. This fact accounts for their discussions explaining change of quantities taken primarily in terms of price. Marshall, whom we may look upon as a chief spokesman, emphasized the relations of prices and quantities, and he recognized that with the passage of time factors other than price would enter in to affect quantities demanded. In other words, in a dynamic society there is a continual adjustment of demand curves on the part of individuals through a readjustment of their desires and wants. With shifting demands on the part of individuals, the aggregate demand, which is the combination of numerous individual demands, tends to shift.

It must be recognized that one aspect of a dynamic society is changing purchasing power. If the purchasing power of a society is increasing, competing industries have an opportunity to increase the amount of the aggregate income which each receives because of the larger total income. When purchasing power decreases, however, competition between industries becomes intensified, and certain industries may find themselves particularly pressed because new demand schedules have been set up on the basis of the reduced purchasing power, and quantities which might have been marginal purchases with greater purchasing power are now cut out. Such changes are constantly taking place in a dynamic society.

Cooperative advertising among competitors is a striking illustration of the fact that we live in a dynamic society. It is an attempt on the part of manufacturers and of sellers to change the demand curves of individuals, and consequently the aggregate demand, for products which that industry has to sell. Thereby the industry may get a larger share of the total purchasing power of the community. By making a product appear more desirable, it hopes to increase the utility value of that product to individual consumers. The result may be either purchases by previous nonusers; or greater purchases by present users, at a given price; or equal quantities at a higher price. Any one of these results probably entails the consequent displacement of purchases of other products now relatively less desirable. In the technical terms of the economist, cooperative advertising of manufacturers seeks to establish a new demand curve for a product or to raise among consumers the utility of the product.

Ordinarily, manufacturers who undertake cooperative advertising are not thinking so much about creating a demand, sufficient to enable them to raise the price for their product, as they are of increasing the amount of the product which may be sold at the current price. Usually, by so doing, they may use more completely their manufacturing and marketing facilities and thus increase profits.

In a dynamic society in which the wants and the purchasing power of consumers are continually changing,[3]

[3] The phenomenon of change in demand over a period of time is clearly brought out in M. T. Copeland's study on marketing in the volume, *Recent*

with a consequent shifting of demand curves, we need a term to express the susceptibility of products to increase in demand through the stimulation of desire for them by education or aggressive selling over a period of time. Such a term is needed to supplement that of "elasticity of demand," which refers to the relation of increases or decreases in demand to changes in prices. We find such a term in "expansibility of demand."[4] A product with expansible demand is one for which the demand can be increased, without change of price, through appeal by sellers to consumers' buying motives. Conversely, a product, the demand for which cannot be readily increased by an appeal to buying motives, is one with an inexpansible demand. The problem involved is that of the relative difficulty of creating new demand curves.

Examples of products which have demonstrated in recent years an expansible demand are oranges, paint, greeting cards, and portland cement. Articles with relatively inexpansible demand have been matches, white flour, potatoes, and the like.

A product with expansible demand is one which is subject to increased purchase under one or more of the following conditions: (1) When individual consumers already using the product may be induced by some appeal to their buying motives to use more of it for the purposes to which they are already putting it; (2) when present users may be induced to buy more of the thing to apply to new uses as the result of education or appeals to buying motives; (3) when potential buyers of a product, who formerly have not purchased, may be induced to buy after being convinced of the desirability of the product through a stimulation of buying motives.

A determination of the degree of expansibility of demand for any product ordinarily is essential in estimating the likelihood of success of a cooperative promotional or advertising program on the part of a group of sellers. If increased purchases of a product can be induced only with difficulty, then it is probably not worth while to proceed on an expensive promotional program. On the other hand, if a latent demand can be stimulated, then advertising expenditure is likely to be worth while.

II. *Certain Basic Considerations in Appraising the Opportunity to Stimulate Primary Demand*

Let us now consider what factors should be studied in order to determine whether a product has an expansible demand—whether it will be likely to respond to advertising and promotional stimulation.

Any program of selling and advertising to be effective must be planned with individual consumers in mind. It must be directed at those who can be induced to buy. The opportunity for expanding the demand for a product may be determined by the usual procedure of studying the product to find out what wants it may satisfy and how well it satisfies them; of estimating the force of the appeals which can be associated with the product in advertising and selling; of analyzing the market to determine, first, the number and character of present buyers and the extent

Economic Changes in the United States, published for the National Bureau of Economic Research by the McGraw-Hill Book Company, Inc., New York, pp. 321 *ff.*

[4] A discussion of this term will be found in a commentary by M. T. Copeland on the case of the California Fruit Growers' Exchange, III HARVARD BUSINESS REVIEW 123 *ff.*

and nature of their use of the product and, second, the number of potential buyers as determined by their buying power and by buying habits and attitudes; and finally, of analyzing possible selling and promotional programs to determine whether plans of strategy may be fashioned which are likely to produce actual sales.

Let us turn first to the problem of studying the product to determine what wants it may satisfy. It is not within the compass of this article to go into an analysis of the needs or wants of consumers. We shall merely stress the fact that the aggressive marketer must consider carefully the wants of the consumer which his product will fill. Such study provides the basis for determining the possible purchasers for his products and the appeals which can be made to stimulate desire for them.

The task is one not merely of determining the wants which a product may fill, but also of observing whether and how the particular consumers' wants which the seller's product can fill are being currently satisfied. Ordinarily, several types of products are available for the fulfillment of a particular desire. Native wants are met in different ways. Unless a product compares well with products of another type in filling the wants of the consumer, it is working at a disadvantage.

Numerous cooperative advertising campaigns are ineffective because too much attention has been given to the attempt to find some advertising or promotional formula which would sell what the industry has happened to be manufacturing, and too little attention has been given to merchandising study —that is, to determining how the products of the industry should be changed to meet consumers' desires or what new uses might be found that could be exploited. Advertising which follows good merchandising achieves greater returns than does advertising attempting to sell a product which, for some reason or other, fails fully to meet the desires of consumers.

Those trade associations which have had a merchandising point of view, and which have sought to mold their promotional efforts in accordance with their merchandising activities, appear to me to have adopted a basically sound viewpoint. The Portland Cement Association, for example, has devoted considerable research to a study of the product to insure its satisfactoriness for the various purposes to which it is devoted. The Association has sought to make its findings known among contractors, architects, and builders. By studying the needs and wants of consumers, it has adapted products to meet those needs; hence it has had a sound basis for carrying forward aggressive promotional work. Before embarking upon any program of promotion and advertising, moreover, the Association has made careful study of the opportunity for the sale of cement for any particular purpose. Unless the field to be exploited has given sufficient promise of returns to justify a promotional expenditure, no efforts have been undertaken. The merchandising point of view has been followed.

The Cotton Textile Institute has itself given considerable study to the characteristics of the products manufactured by its industry, and has secured the cooperation of governmental agencies in this study. Armed with this information, it has looked about for new uses to which cotton textiles might be put to good advantage. It has sought to aid its members in designing their products to meet

(2) the effect of buying power of indi- ing is likely to appear much

consumers' needs and desires; for products subject to fashion demand, it has attempted to guide its members to better styling. By such means, also, an industry which has failed to hold its place in inter-industry competition may hope to reestablish itself.

Closely associated with the study of wants which a product may satisfy is the determination of appeals to buying motives for stimulating desire for it. A study of the needs or wants filled by a product serves as a guide to the appeals that can be presented to make the product wanted. The force of the appeals that can be associated with a product must be estimated. It is not enough to say that a product under consideration appeals to some basic want or desire of the consumer and that such a want is a strong one. It is necessary always to think of the appeal to a buying motive, associated with a particular product, as being in competition with the same type of appeal associated with other products or, as a matter of fact, as being in competition with the numerous other desires of the individual whose limited income can probably satisfy only a part of his desires. The sellers, then, must ask themselves how dynamic or forceful are their appeals when related to the product which they sell.

Too frequently, cooperative advertising programs have, at the core of their copy approach, an abstract idea that is not likely to take hold of a consumer and to lead him to purchase. For example, the retail jewelers carried on a rather extensive campaign trying to induce people to "buy gifts that last." Who was ever induced by such an appeal to purchase a piece of jewelry? Any such abstraction lacks the force of an appeal centered around specific merchandise, the possession or use of which can be made to appear desirable to the consumer. Too many cooperative programs lack concreteness; they lack effective urge to action. Their indirectness suggests a blind faith in advertising which is characteristic of many business men. Much more confidence can be placed in those campaigns which aim to lead to some immediate action that will result in actual sale. The more successful campaigns, of those which were studied, were of this type.

Let us turn next to the problem of estimating existing and potential markets. The studies of the wants which a product can fill, and of the appeals which can be made to increase its use, are steps in the process of estimating the size of the market that can be stimulated for a product. At the start, however, it is essential to determine as closely as possible the number of current users of a product and the extent of their current use. Likewise, an estimate must be made of the probable number of nonusers who might be induced to buy. Such a study can rely on statistics in part, but in large degree it must depend on estimates and judgments. The study of the number of present users and the extent of their use can be learned to some extent through an analysis of market and sales data or through field investigation. Judgments and estimates of the opportunity of stimulating increased use will turn upon a study of the groups of individuals themselves.

Two further topics bearing on the willingness to buy or the resistance to buying are: (1) the effect of fashion trends, technical developments, or changes in living habits or living customs as they may affect the opportunity of increasing demand for a product; and

in their wardrobe by educating them quick-setting cement has put cement

(2) the effect of buying power of individuals or groups of individuals in its relation to an increase in demand.

Fashion trends, new habits or customs, technical developments, or any unusual circumstances may operate for or against the purchase of any product to be advertised and promoted. A maxim governing promotional effort rests in the old truism, "It is much easier to go with the tide than against it." Advertising which attempts to overcome a fashion trend may well be doomed to failure. If a fashion trend is away from the product, then it becomes especially necessary to estimate the amount of resistance to be overcome and to determine whether there is any possibility of overcoming it without excessive expenditure. The cases studied illustrate some of the considerations and analyses which must be undertaken. Since the volume of sales of greeting cards has increased materially during the period of advertising, the advertising of the Greeting Card Association is generally considered to have been successful. Greeting-card manufacturers were wise and fortunate in banding together during the World War to take concerted action against publicity for conservation, which was threatening to create a prejudice against their product. In the subsequent years, the industry was fortunate to be operating with a fashion trend, for the sending of greeting cards became a fashion. Undoubtedly the advertising which was carried on helped to stimulate the custom, but the mere fact that the sending of greeting cards became "the thing to do" among a large number of the populace could not be attributed entirely to advertising. The situation merely illustrates the fact that advertising is likely to appear much more successful when it is operating with a fashion trend rather than against it.

The case of the Irish and Scottish Linen Damask Guild likewise serves to illustrate the point. Damask linen had suffered in demand because the use of small colored linen pieces on the table had become the fashion. If the Irish and Scottish Linen Guild had used advertising to attempt to overcome this fashion when it was at its peak, it is questionable whether their advertising would have been successful. They entered upon their advertising, however, when the fashion for the smaller linen pieces had run a good part of its course and when there was likelihood that linen and damask were coming back into fashion. Under these circumstances, their advertising and promotion had a chance to be effective.

The National Shoe Retailers' Association had to consider the causes of a decreased consumption of shoes subsequent to 1910, among which were the advent of the automobile and the fashion of wearing low shoes throughout the year, with consequent necessity for fewer pairs in the average wardrobe. The wants of individuals arise from their activities; when their activities change, the demand for certain products is likely to suffer, while that for other products increases. The factors which operated against a large *per capita* consumption of shoes by men were still in existence when the National Shoe Retailers' Association and other forces in the shoe industry banded together to try to make men "shoe conscious." The success of the advertising and promotional campaign depended upon whether the appeals, which were adopted to induce men to include a large number of shoes

in their wardrobe by educating them to a proper appreciation of shoes, were sufficient to overcome the resistances brought about by existing living conditions. The decreased wearage on shoes continued, as did the fashion of low shoes. The appeals made were abstractions; appeals to other wants were being showered upon men; there was no material increase in buying power. Under these conditions, the appeals apparently were not forceful enough to be effective.

The case of the New England Gas Association, which strove to persuade people to use new gas appliances as well as to use to a greater degree the appliances already in their possession, involved a study of the effect both of changed living conditions and of technical developments. Substitutes for gas had been pressing in. The development of electrical appliances and the reduction of electric rates had necessitated a careful study by the gas industry of the suitability of their products in competition with electricity. In addition, smaller families and increased apartment-house living had operated against increased use of various types of fuel by the housewife. In this case, then, it was essential for the gas industry to study its technical developments in relation to those of competing industries filling the same wants. It was necessary, further, to determine the strength of the buying motives to which appeal might be made to lead housewives, in spite of the prevalence of smaller families and smaller homes, to use more gas.

Another illustration of technical developments, and of their effect on industries competing for the same want, is illustrated in the case of the Portland Cement Association. Development of quick-setting cement has put cement manufacturers in a better position to compete for city paving. A technical development within the industry in this instance reduced selling resistance for the product and made more effective the association's promotional work for city paving.

Let us consider now the effect of the buying power of individuals or groups of individuals in its relation to stimulation of increased demand for a product. Unless the buying power of consumers becomes greater during a period of advertising or promotion, inducement of increased purchases is likely to have to take place through displacement of purchases of other products. A product with high initial price will meet with relatively high resistance to purchase, especially among people with low or moderate income, unless it fills a need of some consequence and makes especially strong appeals. It is necessary always, as I have stated before, to relate price to purchasing power, importance of need, and strength of appeal. For a product of low price, even people of small means may be induced to buy if the commodity can be made attractive enough through advertising, because such a product will take relatively a small part of their incomes. Conversely, a product with high price will mean so much in the way of sacrifice of satisfactions given by other products that resistance to purchase will be great. These principles were illustrated in the cases studied. For example, the Silverware Association made a classification of groups in the market with varying purchasing power and then attempted to estimate its opportunities in each group. The best opportunity lay among the two higher-income groups. The sum of

money involved in the purchase of sterling silverware necessarily meant a limited market in the lower-income groups. Study of the strength of appeals was thought of, then, primarily as related to the higher-income groups where the resistance to price was not so great. Again, the New England Gas Association, in presenting the desirability of different gas appliances in the household, realized the difficulty of stimulating a demand for the higher-priced appliances and accordingly centered promotion largely on appliances of low price. On the other hand, the Associated Salmon Packers had a low-cost product within the range of even those of smallest means. The resistance from price was small, and accordingly the appeals loomed relatively important as related to price. Somewhat the same situation was present in the case of the Greeting Card Association. The cost of greeting cards is relatively small. The expenditure involved may well seem to a large number of people relatively unimportant as compared with the pleasure obtained from sending greetings to their friends.

In summary, in estimating their opportunity for creating new demand curves for their products, it is essential for sellers to relate the force of their appeals to the importance of the purchase price of their product among various income groups. By this means they can determine with what groups of individuals, and among how great a number, they are likely to have a chance of making their appeals effective.

In discussing the factors to be considered when estimating opportunities of creating new demand curves for products, we must not think solely in terms of space advertising as the means of stimulating consumers. Advertising is only one of the forces operating in present aggressive marketing, and frequently it is a much less important factor in consummating sales than other methods of selling. It is necessary, when attempting to induce increased demand, to think in terms not merely of advertising but of the whole marketing process as well. We may consider all the methods used to induce sale as contributing to the effort of creating new demand curves for commodities. When studying wants and appeals and the overcoming of resistances to purchase, action must be translated into programs of marketing strategy. The method which will be most likely to stimulate sale is the one to be sought.

If an aggressive program of advertising and other sales effort is to be undertaken, its probable cost must be measured against the returns that are likely to accrue. I have suggested some of the most important factors to be taken into consideration in estimating the probable resistances that will be met and the extent of increase in demand that might be developed by a program of aggressive promotion. The probable cost of advertising and selling efforts can be estimated fairly accurately; the probable results are likely to be judged only with uncertainty in our present lack of knowledge of the working of advertising and sales promotion. Some sort of judgment must be arrived at, however, to determine whether the advertising and promotional expenditure is likely to be justified by the results to be attained.

There has been a tendency on the part of some economists and business men to distinguish between *constructive* advertising and *combative* advertising and to look upon the former as more desirable than the latter, because com-

bative advertising frequently involves social waste. When we begin to study carefully the nature of cooperative advertising, we must conclude that much of it is as truly combative as is the advertising of brands. After all, if different types of products fill the same wants of consumers, it is often difficult to draw a distinction between advertising which seeks to displace one type of product with another filling the same or similar wants and advertising which merely combats other brands. Practically all advertising is to some degree combative.

Every manufacturer, under our capitalistic economy, is attempting to keep the wheels of his factory operating so that he can make a profit. It behooves him to think of stimulating both primary and selective demand. If his main competition is coming from sellers of another type of product, then the solution of his problem may well rest in combining with competitors manufacturing his type of product in order to struggle with his real competition, that from other types of products. In so doing, however, he should carefully appraise the opportunity to stimulate primary demand along the lines suggested above.

III. *Certain Problems Involved in the Conduct of Cooperative Promotional Programs*

In addition to the problem of appraising the opportunity to stimulate primary demand through cooperative promotional and advertising efforts, the cases which were studied illustrated numerous practical difficulties met in initiating and conducting cooperative programs.

Most of the problems arise out of the difficulties of securing whole-hearted and effective cooperation from a number of firms whose principals frequently are highly individualistic and often inexperienced in sales promotion and advertising. A cooperative campaign assumes a general sharing of the burden among these competitors in working for the common good of stimulating a primary demand for the products which they manufacture. Yet, to secure unity of purpose and unity of effort among a diverse group is under almost all conditions a difficult thing to do. To maintain support and interest is sometimes harder than to initiate a program; it calls for sound management and convincing leadership.

The maintenance of financial support for cooperative advertising over any extended period of time is achieved only infrequently. Some cooperative advertising programs have endured for years; others have petered out after a relatively short period. The causes of early demise are varied. In some cases cessation has been due to ill-conceived programs or ineffective coordination of individual selling efforts with the association programs. In many instances the cooperators have lost interest because of inability to discern measurable results, a common difficulty in advertising work. Sometimes high-pressure money-raising campaigns at the inception of a cooperative effort have brought together half-hearted supporters. In other instances, sufficient funds have not been forthcoming to support advertising and promotion on a scale necessary to produce effective results. In other cases, mismanagement and dissipation of such funds as were available have led to the withdrawal of further support.

Conversely, those programs ordinarily have continued in which a sound appraisal of opportunities has been made and in which programs have been

so designed that cooperators have felt their contributions to be productive of satisfactory results. Accompanying such effort have been sound management, wise planning, and a leadership which has induced contributors to do their part.

Study of the cases showed that the programs most successful in maintaining support were those which had set up plans of advertising and personal promotion designed to produce fairly immediate and discernible results. Whenever an association embarks upon a program of long-time educational effort without having taken measures to induce immediate response, loss of interest on the part of contributors may well be the outcome.

It is true, of course, that in many cases advertising and promotion to stimulate primary demand may be expected to require a considerable lapse of time before a substantial increase in demand is felt. Realizing the need for support over a period of years, and realizing as well the difficulties of maintaining active interest when results at first might not be readily apparent, many promoters of cooperative efforts have resorted to the plan of inducing individual firms to make long-term commitments, usually putting these in the form of trade acceptances to be collected at intervals over a period of three or more years. Such a scheme eliminates the expense of securing subsequent pledges and promises a fair trial period for the promotional program. Frequently, however, firms, especially small manufacturers or retailers inexperienced in advertising, have been induced to enter upon such commitments through the arousing of great expectations from the cooperative effort. When the promised results do not occur, disappointment and disgruntlement appear. Even if the commitments are not repudiated, a half-hearted cooperation leads to ineffectiveness.

Numerous schemes have been worked out for the assessment, collection and disbursement of funds. Each situation is likely to present peculiar problems in these regards. Without entering into a discussion of these points, I wish to mention one practice which has not been uncommon in securing pledges and which seems to me to be open to condemnation; namely, the practice sometimes followed of permitting an outside promoter to undertake this task. While such a scheme at times may be justifiable, too frequently it has resulted in an overselling of the cooperative plan and in excessive costs of administration. Not only have such promoters been given a considerable percentage of contributions in return for their efforts in securing cooperators, but in numerous instances they have secured as well commissions upon expenditures. Too often have excessive amounts of all funds received been absorbed in management, too little having gone into actual advertising and promotional work. Undoubtedly the promoters have frequently worked hard for such money as they have received; if a cooperative program can be launched only as the result of high-pressure methods on the part of an organization outside the association, however, I doubt whether it should be undertaken.

One of the greatest causes of ineffectiveness of cooperative promotional and advertising programs lies in the difficulty of securing effective coordination between the selling and advertising activities of the individual companies and the association activities. It is

unnecessary here more than to mention the importance of planning and carrying through a fully coordinated program of advertising and selling efforts. If an association launches an advertising program merely of an educational sort, and the cooperating firms sit back and expect wonders from it, they are doomed to disappointment. When an individual company undertakes advertising, it expects the advertising to be only a part of a complete program of selling and promotional strategy. Not advertising alone, but a coordinated program of selling efforts, produces results. If each part of a selling campaign is not carefully thought out in relation to other parts, ineffectiveness is likely to be the outcome. Too frequently, cooperative programs have not been carefully enough devised with the ultimate objective of sales in mind. And, often, even a well-constructed plan has fallen through because of the failure of the cooperating firms properly to do their part. Such effectiveness as some association campaigns have attained seems to me to have come not so much from the advertising by the association as from the stimulation of more aggressive selling by all factors in the industry. The maintenance of active interest and cooperation is essential.

In conclusion, I wish to stress again the importance of fashioning an association's activities to meet the problems faced by its industry. If merchandise study is essential, as in the case of the Portland Cement Association, the association should carry on a merchandising study. If price structures are a great hindrance to sales, as was true in the case of the New England Gas Association, an attack on the price problem should be carried on. Advertising and sales promotion are not things apart; nor should they be expected to accomplish great results when conditions within the industry create excessive obstacles to sales.

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The Pneumatic Rail Car.....JOHN S. GULLET 494
Double Features in Motion-picture Exhibition.....EDWARD R. BEACH 505
The Double-liability Aspect of Bank Stocks.....ALLEN W. PIKE 516
International Cooperation as a Solution of the Shipping Problem..... 524
JOHN S. MANUEL, JR. AND WILLIAM S. MANUEL

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THE PNEUMATIC RAIL CAR

By JOHN S. GULLET

THE introduction of the pneumatic rail car[1] into this country, and the practicability of its adaptation to railroad transportation, is of particular interest to the carriers and the public alike. This new unit of transportation involves a changed concept of rail service and is a radical departure from the trend toward heavier equipment which has been adhered to for years by the railroads. The pneumatic rail car, as its name implies, is a light-weight unit, closer to automotive than railroad design, with its light-steel construction, pneumatic tires and internal-combustion engine. It was developed in Europe by engineers working in collaboration with railroad men, who sought relief from the growing deficits attending many of the operations of the uneconomic steam units. The utility of this new equipment and its acceptance by the public will depend upon its ability to serve the needs of passenger transportation adequately and economically. At this time its potentialities are most interesting, both because of the features of the new car and because of the urgent need for better service and lowered costs by the railroads. The possibilities of its development by American carriers can be decided only after a careful estimate of the situation.

[1] Referring particularly to the Budd-Micheline Rail Car, which has been made the subject of recent press releases and is produced by the Edward G. Budd Manufacturing Company of Philadelphia.

Railroad-passenger Traffic

The present financial straits of the railroads may be ascribed in no small

measure to the continued decline in passenger revenues.[2] A recognition of the seriousness of this situation is found in reports covering operations of the Class 1 Railroads for 1931, when passenger earnings were the lowest since 1906. In the past two years, these revenues had declined from $874,889,268 to $551,054,239, or a decrease of 37%.[3] Obviously, this loss of $323,835,029 must have had a very material bearing on the net profits of the roads.

These losses in passenger traffic have been growing in the Eastern and Southern Districts.[4] For the period 1921–1925, their average returns on tentative value for the passenger and allied services were 2.69% and 1.828% respectively. But for the period 1926–1930, their average returns had declined to 0.778% for the Eastern District and, for the Southern District, to a negative figure or deficit amounting to 2.787% of the tentative value concerned. Such cumulative losses are, unquestionably, an unpleasant sign for the rail-passenger traffic.

These declines in rail-passenger traffic have occurred primarily on the branch lines. To illustrate, in 1920 one of the large roads in the East was operating some 2,200 miles of rail-passenger service. By 1930, this figure had been reduced 709 miles, or a decrease of 32%. The curtailment of branch-line operations accounted for this reduction in the total rail miles operated for passenger traffic.

The question naturally arises, what has occasioned this rapid decline in the passenger traffic of the country's railroads? The fact that the decline has been one of steady progression precludes the "depression" as a logical explanation of the situation. The causes appear to be more fundamental even than the economic slump of the past two years. A survey of branch-line operations, together with the changes that have occurred, should throw some light on this subject.

Analysis of Branch-line Operations

It may be concluded that the elimination of many branch-line rail schedules by the railroads has been made for good and sufficient reasons. As operations became unprofitable, business necessity dictated curtailment of schedules in order to minimize the losses. But the results were a lowered ratio of revenue to costs and did not, therefore, solve the problem. For, as schedules were reduced, the inadequacy of the service furnished tended to force the public to other and more convenient forms of transportation. Finally, when the operation of the steam equipment became highly impracticable, rail cars of various types[5] were often substituted. While these units served to reduce costs some 50% over the equipment they displaced, still their operation in the main has been unsatisfactory, both to the railroads, in point of economical operation, and to the public in the manner of service. In many instances, then, the rail-car service was discontinued altogether. However, some sort of service had to be furnished, and the railroads have in some cases

[2] Report of the Interstate Commerce Commission for 1931. See also report of the Commission, *ex parte* No. 103, in the matter of increases in freight rates and charges.

[3] *Railroad Data*, March 4, 1932.

[4] Evidence introduced in a recent rate case before the Interstate Commerce Commission by Professor W. J. Cunningham of the Harvard Graduate School of Business Administration.

[5] These types have primarily to do with the motive power employed, such as Brill Gas and Sykes Gas (which refer to a mechanical drive employing the use of a gasoline engine); the Brill Gas Electric (which operates on electricity generated by a gasoline engine); Diesel and Diesel Electric (mechanical and electric drive, respectively).

resorted to the operation of motor-bus equipment on the highways as a last resort in minimizing costs.

This brief survey of the changes that have taken place on the branch lines is indicative of the problems confronting the railroads. But this is merely a recitation of the facts and does not account for the causes that have influenced them. It might be argued that price has been an important factor in prompting the public to utilize other forms of transportation, and to a certain extent this is correct. But when one considers the profitable operation of *de luxe* trains[6] on the main lines, the increasing number of people employing air transportation, and the extended operation of the private passenger car, all of which constitute costs[7] considerably in excess of branch-line passenger fares, one is forced to discount the price factor. In fact, the utilization of these more expensive forms of transportation services seems to indicate the willingness of the public to pay for service rendered. One is forced to conclude, therefore, that the primary cause of the decline of passenger revenues affecting branch-line operations has been one of inadequate service.

Service implies something more than furnishing transportation facilities when, as, and if required. Service today includes consideration of frequent train schedules, speed, comfort and economy among the factors which attract and are acceptable to the public. Without entering into a discussion as to the degree in which these factors have been supplied by the railroads, it must be recognized that the flight of the passenger traffic from the rails to other forms of transportation services has been influenced by the attitude of the public with respect to these requirements. It would appear, therefore, that the railroads have been somewhat amiss in analyzing "adequate service," and that their policies with respect to supplying branch-line services have been ill-conceived and poorly timed. These are not charges made in a spirit of criticism but are, rather, statements intended as an interpretation of facts and conditions.

Branch-line Passenger Requirements

Transportation service, translated into material factors, means that the operating units must be broken down into smaller components in order to obtain the flexibility requisite to operations of this character. To provide such, it means that, in general, individual operating units will be the rule, the construction of which must provide a minimum weight per passenger in keeping with adequate safety requirements. Such small operating units permit of rapid acceleration, stops in a minimum distance with a maximum of safety, and speed between stations, all of which contribute to the maintenance of fast operating schedules at a minimum of cost.

Perhaps it was a general recognition of these things that prompted the railroads to adopt the rail-saving motor bus alongside many of the branch lines. Just as the rail car effected savings over

[6] *World's Work*, March, 1932, "Operating the Century Limited." Just recently, however, extra fares on a great number of trains have been discontinued.

[7] Comparable figures for cost and time of passenger transportation, Boston to New York:

Airplane	$13.90	2	hours
Private automobile @ 6½¢ per mile)*	13.80 (computed	6–8	"
Limited train	12.26	4.75	"
Local train	8.26	5.50	"
Motor bus	3.00	10.00	"

Note: None of the figures above listed include taxi or other transportation charges to or from stations or other collection points.

*Average cost per mile concluded by Iowa State College as result of special study of the subject.

the steam equipment which it supplanted, so has the motor bus reduced operating costs when substituted for the rail car. Even so, the problem has not been solved to the satisfaction of either the railroads or the public. A case in point will illustrate the situation. An eastern railroad, which is utilizing the motor bus alongside some of its branch lines, has found that revenues constitute on the average only 50% of the operating cost. Two interpretations may be made: first, that the nature of the operations precludes a maximum utilization of equipment and personnel, thus fixing operating costs at a high level; and/or second, that the type of service offered is not sufficiently attractive to the public to induce its use on a scale insuring revenues sufficient for profitable operation. Probably a combination of the above is the proper explanation of the situation.

It must be admitted, by those familiar with the motor bus as a medium of passenger transport, that in general it offers few desirable qualities. Aside from price, which must be recognized, and its ability to be routed to collection points convenient for passengers, the motor bus is far from an ideal form of transportation.[8] Many things mitigate against its acceptance by the public. It is slow, noisy, often poorly air-conditioned, and affords little in the way of riding comforts; moreover, inclement weather retards schedules and adds an element of danger to operations over crowded highways. It is not unusual, therefore, that in the absence of adequate rail services an increasing number of people should have elected to operate their private passenger cars, notwithstanding the added expense involved, highway-traffic problems, and the inconvenience of city parking. The degree to which this condition obtains is evidenced in the declining passenger revenues accruing to the railroads.

The motor bus does have a highly important function when operated as a supplement to rail equipment. But it is not believed to be sound policy, in the majority of cases, to institute motor-bus operations in lieu of rail facilities. To do so is to subordinate rail functions to the highways, which, as has been pointed out, has been neither a satisfactory nor a remunerative policy.

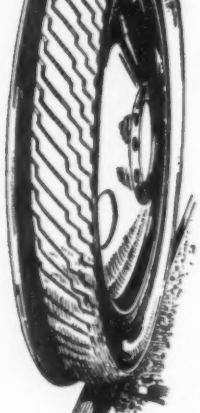
If rail operations are to continue to be the major function in railroad-passenger traffic, it is obvious that a new type of equipment is necessary for branch-line services. To embody in a unit of rail-car equipment those factors which meet present-day passenger-traffic requirements necessitates a thorough study of car design, in order both to provide the individual comfort desired and to insure maximum efficiency and safety in operation. It is apparent that the results of such a study point to a wide departure from the designs of existing rail equipment now in use.

The Pneumatic Rail Car

There is in the development of the pneumatic tire for rail cars an interesting paradox, for just as the pneumatic tire has made it possible for motor cars and buses to compete with the railroads in passenger transportation, so now does the pneumatic tire offer to the railroads a means for minimizing future competition and a possibility of regaining a part of this business that has been lost to the highways.

[8] Aside from the price factor, the extensive use of the motor bus is generally attributed to matters of expediency. That is to say, this service is often the best means of transportation available, everything considered, especially on branch lines.

The present type of pneumatic rail car has passed beyond the purely experimental stage. While its introduction in this country is a recent occurrence, it should be remembered that it has demonstrated its practicability in rail operations in France and England. This unit of equipment, by virtue of its size, weight and flexibility, lends itself to branch-line services. The pneumatic tire, with the conventional type of rail flange, provides riding comfort and safety. Weight, which is a limiting factor in the construction of this equipment, has been met by the utilization of stainless steel[9] and a patented process of shot welding. The all-steel construction, while employing minimum weights, has incorporated strength values insuring adequate safety. These factors have made possible the development of a car to which the pneumatic tires are readily adapted.



It goes without saying that a pneumatic tire, riding on the smooth plane provided by the steel rail, affords riding comforts not possible in any other type of rail equipment now in use, and the adhesion[10] of this tire on the steel rail, which is three times greater than that obtaining for the conventional type of steel wheel, insures maximum acceleration and braking qualities. These factors make for speedy scheduling with a high factor of safety. It might be pointed out that the wheel and tire construction have been so designed as practically to remove all hazards attending tire deflations. In fact, the size of the air-chamber and its peculiar characteristics of design insure an almost imperceptible lowering of the coach in case of tire deflation (⅜-inch), at which time the weight is taken up by interior structures in the casing. The present estimated price is $25 per tire; the estimated life of tires is 20,000 miles.

The interior of the coach design provides exceptional comforts for its forty passengers. Nonshatterable glass windows, cushioned in sponge rubber, remain permanently closed, thus keeping out most of the dust and dirt and deadening noises from the outside. Air conditioning has been provided, temperatures being subject to control as desired. The car lighting, which has been given special study, is exceptionally good and is provided at a minimum of cost.[11] This is made pos-

[9] This particular stainless steel, 18% chrome and 8% nickel, is considered superior to aluminum for this type of construction. Members forming the special structural sections are 0.03-inch in thickness, while the sheets making up other sections of the unit are only 0.009-inch in thickness. Measured by unit of weight, this steel is stronger than aluminum. Moreover, it lends itself to the new shot-welding process, and is decidedly more economical, according to the findings of the engineers of the Budd Manufacturing Company.

[10] The coefficient of adhesion for the pneumatic tires is estimated to be 0.62, whereas that of the conventional steel wheels is computed to be 0.20.

[11] An indirect system of lighting provides (1½) one and a half foot candles of light at reading distance at a cost estimated to be only 10% of the customary power charges involved.

sible by the special dome construction of the ceiling, the position of the lighting units, and the reflection of the light rays. The steel floor has been inlaid with cork, which, together with the pneumatic tires and the rubber insulator-stabilators, affords shock elimination and quietness to a surprising degree. With the car in motion, conversations are easily conducted in the ordinary voice, and even the passing of fast freight trains interferes but little with these conditions. Double rows of seats on either side of a center aisle incorporate the latest features in seating comfort. Here, as elsewhere, comfort and light weight have been the motifs, these double seats with frame and especially deep rubberized-hair upholstery weighing only thirty-five pounds. In addition to these material qualities, the interior finish of the coach is artistic and creates an atmosphere of comfort.

The power plant of the existing model, a ninety horse power Diesel engine, is located forward and is separated from the passenger compartment by a door and windows of nonshatterable glass. The driver's compartment provides room for some 1,500 pounds of baggage, which may be loaded or unloaded through doors on either side. Forward vision is exceptionally good through the application of heavy-glass and special-lighting devices in the car construction. Added safety equipment includes Bendix-Westinghouse Air Brakes on eight wheels, and a hand-actuated emergency brake on four wheels; block-signal operating shoes; standard railway signal devices; regulation searchlight mounted on the front of the car; and a special heating and wiping apparatus that keeps the windows free from sleet and ice.

When one considers the size[12] of this rail car, it is difficult to realize that the total unloaded weight is only 13,500 pounds, or one-seventh the weight of the average rail car, and slightly more than one-sixth the weight of the average rail-passenger coach used in branch-line operations.[13] This average dead weight, empty, of 337 pounds per passenger capacity, makes possible the utilization of a relatively small internal-combustion engine which is, nevertheless, sufficiently powerful and flexible even when acting through a straight mechanical drive to serve the purposes desired. Indicative of the flexibility of this unit is its ability to attain a speed of fifty miles per hour, in a distance of 650 yards from a standing start, and to be returned to a stationary state from that speed in ten rail lengths, or about 110 yards. Such performance is, of course, unheard of in operations of the conventional steam-and-rail-car equipment and is made possible in the new rail car only by the combination of the light, yet strong, welded-steel construction and the pneumatic tire.

Development and Adaptability

The pneumatic rail car is a splendid example of what may be expected when engineers and practical business men combine their efforts in the development[14] of a product intended for specific purposes under a given set of conditions. This new rail equipment

[12] Length, 41⅜ feet; width, 8¾ feet; and height above the rails, 10½ feet. Capacity, 40 passengers and baggage.

[13] These weights are 95,000 pounds and 75,000 pounds, respectively.

[14] Original developments were made in 1929 by the Micheline Company in France. Subsequently, M. Raoul Dautry, Director General of the French State Railways, became interested; through his influence the practical application of the unit to branch-line railroads was facilitated.

was not evolved overnight. It is, on the contrary, the result of some years of research, design, test, redesign and test, and continued repetition of this engineering cycle until there were perfected the existing types which are believed to embody the fundamental concepts of what a rail car should be.

In the beginning there was a recognized need for a type of rail transport which would have ample carrying capacity to serve the needs of branch lines economically, and at the same time provide a service far superior to the conventional type of steam equipment then being utilized. It was the realization of the inefficiency and inadequacy of the steam-rail services that prompted the seemingly radical changes which were incorporated in the design of the pneumatic rail car.

M. Raoul Dautry, Director General of the French State Railways, saw in a car of this type a solution to the branch-line passenger problem, and it was through his interest and support that many of the practical tests and operations were made possible. Through this process of trial and error there were produced nine types of rail cars, each an improvement over its predecessor, in keeping with the requirements envisioned for operations under changing conditions. A late model, a twenty-four-seater, designed to run in both directions, has been developed and is believed to incorporate those requirements essential for satisfactory branch-line operations on foreign railroads.

This twenty-four-seater Micheline Pneumatic Rail Car has been operated under service conditions in France since the winter of 1929–30, and the results have been very promising. On the Laqueille-Mont Doro Line, which rises from sea level to 3,280 feet, one of these cars was placed in service during the winter months for purposes of test. Despite ice and snow, grades as high as 5%, and curves the radius of which were frequently as low as 270 yards, the running schedules were maintained at the average speed of forty-six miles per hour, thus indicating the reliability of this equipment under adverse conditions. On the St. Florent-Issoudon strategic line, where track conditions limit the steam trains to thirty-seven miles per hour, these rail cars were able to run normally at sixty miles per hour, and at the high speed of seventy-eight miles per hour the cars are reported to have remained quite steady and with no inclination to leave the rails. On another line a run of seventeen miles, calling for nine stops of thirty seconds each, was negotiated at the commercial speed of thirty-three miles per hour, practically double the speed of a regular steam train operating under the same conditions.

Similar results have been obtained in England, where these Michelines were introduced early this year. The London, Midland and Scottish Railway Company has been conducting a series of tests on its Bletchley-Oxford branch line. On nonstop runs over distances averaging thirty miles, commercial speeds of fifty miles per hour were the rule; for the stopping-runs, over a nineteen-mile section of line, the rail coach consumed thirty-one minutes, as compared with the average running time of forty-two minutes for the steam equipment.

Aside from the operating efficiencies claimed for the foreign rail cars, other savings are anticipated in the utilization of this equipment on the branch lines. Included in these estimates are personnel reductions, such as one-man operated units, instead of a crew of four required for steam equipment; and

elimination of station agents, flagmen at crossings, and many track-maintenance employees necessitated by the operation of the heavy steam trains. Savings in material and costly signal installations are also expected, for, with the flexibility provided in these small rail cars, it is contemplated that reduced speeds, or even full stops, will be made whenever required, thus obviating the necessity for signals and flagmen for passenger traffic. Assuming that train-service regulations and conditions in the countries where they are used permit of operations of this character, it is apparent that the adaptation of the rail cars to branch-line services will afford the railroads much in the matter of cost reductions, aside from the savings effected by the employment of more economic operating units. It would appear, therefore, that in two European countries the pneumatic rail car has demonstrated its practicability and ready adaptation to branch-line operations under conditions existing there.

Application to American Requirements

It is natural to suppose that, in introducing a new product of this nature to the American public, certain changes would be necessary in order to meet the needs of varying changed conditions. Accordingly, the American concept of a pneumatic rail car has been interpreted in the designs first discussed. One not familiar with the earlier development would scarcely recognize in the American-made product its foreign counterpart. While the general engineering principles have been retained, there is a great disparity in body design and appearance. Whereas the foreign car has the lines and contours of the motor bus, the American design incorporates more nearly those of the rail coach. This provision is good and timely and indicates clearly a recognition of the style factor that an American product of this character must embody if it is to be wholly acceptable to the riding public. Other changes, catering to the American market demands, were likewise provided for.

The nature of the equipment now utilized on the branch lines, together with unsatisfactory operating conditions obtaining, have been referred to. Also, some of the qualities now offered in the pneumatic rail car have been discussed. In order to throw into relief a comparison of these several types of equipment, operating under a given set of conditions, a table[15] has been prepared which sets forth data obtained in the course of the study.[16]

It will be noted that the operating costs per train mile for the steam equipment are about double those for the ordinary rail cars, and the latter costs are two and one-half times as great as the cost of operating the pneumatic rail car. When one considers the relative weights of these individual units, their power-plant efficiencies, maintenance and repair, wages and miscellaneous expenses involved, it is readily apparent that small, light units should show to advantage in operations of this character. Even if one should assume that the steam equipment had been fully depreciated and that no interest charges were to be computed, the cost of operation of the steam train would still exceed ninety cents per mile.

An analysis of the figures relating to the steam equipment shows that exclu-

[15] See Exhibit 1 for details.

[16] Sources from which this material was obtained are held confidential. However, the statistics have been checked by Professor W. J. Cunningham, Transportation Department, Harvard Business School, and are believed to be substantially correct.

sive of suburban service the other two branch lines, the average length of which is seventy miles, carry only thirty-seven passengers per trip. With only 30% of the passenger capacity utilized, and aside from the high costs involved in the operation of steam locomotives of the types employed, it is obvious that the transport of this surplus capacity is uneconomic. It is only natural, therefore, that the railroads should have taken steps to supplant these steam units whenever and wherever practicable. Savings in operating expenses more than justify the investment, notwithstanding the increased cost per unit of passenger capacity.

While the rail cars now in use have effected savings to the roads, their operation for passenger service has not been profitable. Not one of the three lines studied has been able to meet operating charges. These units are larger than the traffic requires and, as a result, the operating costs per train mile are out of line with passenger revenues. The roads must give service, and these motor coaches have been the cheapest means of rail transport available.

It will be noted that figures listed for the motor-bus operations cover main-line traffic. At the time of the study, complete figures were not available for the rail-saving motor-bus activities on the branch lines. However, officers charged with these motor-bus operations estimate that costs exceed revenues by at least 100%. Obviously

EXHIBIT 1

Item	Steam Trains*	Rail Cars†	Motor Bus‡	Pneumatic Rail Car§
1. Miles of line	51	36	230	30
2. Passenger-train units	2.3	1	1	1
3. Passenger seating capacity	140	46	33	40
4. Weight of equipment—empty (lbs.)	450,600	80,275	13,200	13,500
5. Weight per unit of passenger capacity (lbs.)	3,556	1,861	400	340
6. Average number passengers carried	69	17	29	15
7. *Per cent* capacity utilized	41.8	45	90	37.5
8. Weight per passenger carried (lbs.)	13,388	7,551	444	933
9. Cost of equipment—new	$29,174.00	$31,378.00	$14,000.00	$25,000.00¶
10. Cost per pound	.064	.39	1.06	1.85
11. Cost per unit of passenger capacity	208.00	682.00	424.24	625.00
12. Cost per unit of passenger capacity utilized	423.00	1,846.00	482.00	1,666.00
13. Revenue per passenger train mile	.817	.316	.42	.30
14. Operating expenses per train mile‖	1.02	.549	.26	.205

* Figures for the steam equipment are averages covering operations on three branch lines, one of which represents suburban traffic near a large eastern city. Length of line varies from 13 to 83 miles—passenger coaches from two to three per train. Investment does not include baggage cars, but does include locomotive (relatively old types).

† Figures for the rail cars are averages for operations on three lines varying in length from 22 to 62 miles. Only the passenger units have been considered—trailer investments and weights have not been considered.

‡ Figures for the motor bus as here listed are those covering main-line operations between two large cities in the East, where population density provides maximum utilization of both equipment and personnel. Both revenues and cost figures are among the best known and as such must be discounted when considered in terms of the branch-line operations.

§ Figures for the Pneumatic Rail Car are assumed as regards the line and the operations. However, cost estimates are based on known operating records. It has been assumed that a unit will be operated one trip per hour—six trips per shift—which includes two operators at $5 each per six-hour day. The actual cost of operating this equipment is slightly less than 12¢ per mile, but 15¢ per mile has been used plus $10 for wages, which approximates 20.5¢ total costs for each of the 180 miles run per "shift." The number of passengers per trip has been assumed to be 15, and is considered low. Then, too, the fare of 60¢ for the 30-mile trip is less than existing rail rates. It is believed that revenues are listed lower than can be expected, once such equipment is placed in regular operation.

‖ Includes wages, fuel, repairs, supplies, interest and depreciation of rolling-stock equipment.

¶ Present prices are slightly higher on account of developmental charges; the figure listed is considered reasonable once the company "gets into production."

operations of this character cannot continue indefinitely. Radical changes must be effected ultimately.

When one is reminded that to date the railroads have utilized three different types of equipment on the branch lines with poor results, it might be concluded that a similar experience would attend the utilization of the pneumatic rail car. This reasoning is logical, except that it overlooks the fact that, in the operation of this new type of equipment, there is offered to the public a quality of service heretofore not available.

It would appear that a rail car of this character lends itself to branch-line operations as does no other form of equipment, and as such offers to the railroads a practical means of solving this very important problem. It is believed that the inauguration of a "shuttle" service, using this type of equipment, would be sufficient inducement to attract patronage to collection points along the rail lines. Primary considerations are those relating to dependable and economical rail transportation of a high order that meet the requirements of the public and at the same time provide for the railroads a fair return on their investment. These several things, it is believed, are possible through the utilization of the pneumatic rail car on branch-line railroads.

The fact must be emphasized that the pneumatic rail car is something decidedly new in surface transportation. Nothing of its kind has ever been offered the American public. The import of this statement can be appreciated only after personal experience with its operation. This new unit has no more in common with the time-honored branch-line rail equipment than has the new V-8 Ford with the old Model T. These things are significant, for they reflect both novelty and utility, which are primary attributes in modern merchandising, and they should have a place in the transportation field of the present order.

Summary and Conclusion

That the public is demanding better transportation services cannot be overlooked. And that passenger traffic tends toward those facilities offering quality accomodations is attested by transportation statistics. Obviously, then, those agencies which are most alert in interpreting the public requirements and translating them into material forms are the ones that may be expected to profit in the long run.

The railroads, with their extensive plants and experienced organizations, have an immense advantage in the exploitation of rail-transportation equipment. As pointed out, the pneumatic rail car seems to be peculiarly adapted to branch-line operations, but there also appear to be possibilities on the main lines where local services must be furnished. Multiple units now being considered are an indication of the thought in this direction. What will be the attitude of management with respect to this new form of transportation? The lessons learned in the development of the motor bus and truck are still alive and vitally interesting, and it is quite possible that this schooling will manifest itself when the traditions and the economics of passenger transportation are next weighed in the balance.

Fortunately, the pneumatic rail car lends itself to other rail operations and is not, therefore, wholly dependent upon the railroads for its development in this country. The elevated rail-

ways could very well capitalize this new equipment and thereby appease the citizenry now clamoring for the elimination of the noisy steel wheels. As for the subway trains, there is no reason why they, too, cannot take advantage of this new development. For it must be remembered that this new rail car lends itself to electric operation with either overhead trolley or third-rail installations. In a field so broad, it is inconceivable that the public should long be denied the transportation services believed possible in the commercial application of the pneumatic rail car.

DOUBLE FEATURES IN MOTION-PICTURE EXHIBITION

By EDWARD R. BEACH

THE question of double features has grown in the past year to the status of a major problem of the motion-picture industry. The practice of certain exhibitors of showing two, and in some instances even three, feature pictures on the same program, and without an increase in admission price, has caused consternation among other exhibitors and among distributors and producers of films. It is the purpose of this article to examine the motives leading to this form of price cutting and the consequences arising therefrom, and to determine whether or not most of the men engaged in the industry are correct in their claims that double features are an evil that should be mollified, if not abolished.

Credit for the origin and growth of the practice of double features as a steady exhibition policy goes to New England. Outside New England, double features had never become widespread before 1931, although they had taken on the proportions of a serious problem in the local areas of Chicago, New York, Montreal, Cleveland, and Northern California. However, in the past year the practice has spread to include approximately 1,800 theaters in the United States,[1] or, roughly, one-eighth of the number of theaters in actual operation—constituting about one-fifth of the distributor-rated "better" accounts. In certain sections of the country double features have been accompanied by so many evils that the matter is worthy of deep consideration along the lines of sound economics as related to population characteristics and buying habits.

[1] *Variety*, Feb. 23, 1932, p. 7.

Reasons for Growth

In general, the growth of double features can be traced to the stiff competition that arises in the more overseated areas. This area overseating is more keenly felt through the lowering of consumer purchasing power because of business depression, which explains the flurry of double featuring since 1930 in certain sections of the country. On the other hand, conditions in an overseated area may be alleviated through the darkening of some theaters, the population growth, or the stimulation to greater picture attendance in that area; the latter possibility is seized upon as the principal excuse for double features. But the viciousness of the practice lies in the fact that a minority, turning to double features, can cause the majority to follow suit. Whether or not the overseating of a community is temporary (due, for instance, to temporary business depression) or relatively permanent, double features will spread when started, and audiences will, in time, become so accustomed to the practice that double features will appear necessary for the existence of many theaters—outside of the first-run houses, which usually have live entertainment (stage shows and orchestras) or other strong attractions that render a second feature unnecessary and undesirable.

The growth of double features in New England is illustrative of the contagion of the practice. In 1915, the management of the Park Theater in Boston conceived the idea of attempting to strengthen their somewhat reduced patronage by showing a revival of an old favorite (Mary Pickford in "Tess of the Storm Country") along with the other feature. The idea proved quite successful, and revivals of other former hits were added to programs. This led to an experiment with two features of late release, and the result was the first instance of double features as a steady policy. Most other first-run, exclusively picture theaters were compelled to follow suit, and the practice spread throughout the New England area in subsequent-run houses. New England distributors, unafraid of any product shortage, apparently were pleased by their increased bookings through widespread double features. They did not foresee that the area's gross receipts in the aggregate would be insufficient to pay the previously obtained rentals per picture, and that a downward revision of film rentals was inevitable. Certain progressive Boston exhibitors attempted to crystallize exhibitor sentiment for a return to single features in 1927 and 1928, when the strong drawing power of the newly developed sound feature was apparent. However, many exhibitors were unwilling to risk the return to single features, and the double-feature policy was maintained throughout the area.

Any study of film exhibitions and distribution must constantly recognize the importance of quality in product. The tendency to see a particular picture (in contrast to merely "going to the movies") has grown steadily in the past decade. The entire industry rests upon the quality of the motion pictures offered to a public that is growing steadily more discriminating in its film tastes. The constant effort to locate and appeal to public tastes—so intangible and fleeting—with a product of only transitory appeal will always result in a number of failures as well as successes, and this will be noted immediately at the box office. A further complication arises in the varying standards for motion-picture quality throughout the United States, which are indicated by the fact that a single film often draws well in some parts of the country and fails dismally in others. Exhibitors have always been in a constant scramble to achieve quality in product to hold their patronage, so that at times the release of product too poor to play alone has proved a major incentive to adopt two features as a patronage retainer. Exhibitors have been compelled to show products of known poor quality because of a prevailing dearth of quality features and/or because of block booking—the custom of the trade in motion-picture distribution. The practical result of block booking is that a single theater, or chain, will book perhaps one and one-half times as many films for a year as it can ordinarily use in order to obtain most of the available quality product to protect the theater investment. Under such conditions, block booking amounts to overbuying, which, especially when coupled with a run of rather poor-quality product, can prove a powerful incentive to start a double-feature policy.

The direct dependence of the box office on quality in product results in another major incentive to double feature. No theater can be so fortunate in its booking arrangements and clientele as to escape the wide fluctua-

tions in box-office grosses that mirror the variations in film drawing power. Obviously, the showing of two features of different appeals offers the possibility of smoothing out box-office returns in order to escape dependence upon the drawing power of a single feature. Yet even in double-feature theaters, box-office grosses fluctuate with the quality of the two films offered; double features offer little guarantee of smoothing out gross returns. It should be noted that most double-feature bills consist of a strong- and a weak-drawing feature; during very few weeks of a year can a theater obtain or afford to pay the rentals of two strong-drawing features for use on a single bill.

The element of timing (to catch the public fancy for a newly released film) in the drawing power of a feature also contributes to the practice of double features. No uniform system of zoning or protection exists in the United States. In some situations the protection (or length of time allowed those theaters before their films will be allowed to be shown elsewhere in the community) given first-run houses has been deemed so unreasonably long that double features have been resorted to by intermediate and subsequent-run houses to offset their competitive disadvantage arising from late showing of features.

Another incentive to double featuring has been the difficulty of obtaining the quality of entertainment which will support a single feature. In some first- and intermediate-run houses, live entertainment became overcostly; sufficiently attractive quality is difficult to find. In all houses, the difficulties of obtaining suitable short film-subjects has been felt. To avoid a weak and/or costly supporting bill, the addition of a second feature has been resorted to by some theaters.

The principal excuse for an exhibitor's turning to double features lies in the possibility of greater drawing power of two wisely chosen features than of a single feature. Proponents of the double feature claim that it satisfies a need for diversity in a program of entertainment which the ordinary single-feature bill has failed to provide, that the different appeals of two features assure an audience desirous of seeing either feature singly in addition to an audience of quantity shoppers, and that the advertising value of the second feature ("2 features for the price of 1") is greater than the appeal of short subjects.

As concrete evidence, proponents cite the usual rise in box-office receipts after a change to double features. Yet, as competition takes up the practice, a falling-off of receipts is usually noted. Unfortunately, no statistics are available concerning the all-important point as to whether or not total box-office grosses for a group of competing theaters are greater with all showing two features than when all were on a single feature basis. In other words, exact information is not available as to the number of quantity shoppers who will patronize films more often when two films are shown on the same program. Statistics would tend to lose significance, because they would be based on the drawing power of past film releases —not connected for practical purposes with the draw of future releases. Since reasoning must be confined to generalizations based upon experience in the industry, one must give weight to the opinion of the majority in the trade that nearly the same number of people will attend films in a given locality over a period of time whether all theaters are showing two features or one feature. Assuming this to be true

(developments in every double-feature area bear out this contention), exhibitors will, in the long run, demand and receive lower picture rentals; their budgets will cover two features only because of lower rentals per picture. Thus, a territorial double-feature policy can succeed in the long run only because of lower rentals per picture, which leads to a consideration of possible justification from the distributor's standpoint.

Consequences to Distributors and Producers

The motion-picture industry's reactions to the prospects of widespread double features are similar to those of any other industry when it is confronted with the prospects of a lower price for its product. Competition for patronage has never been keener than at present, and in this period of falling prices the natural results have been a widespread reduction of admission prices and a growing trend toward double features. The net result of this price cut to the consumer is, obviously, lower rentals for product; the exhibitor's margin of profit does not permit former-scale film rentals in the face of lower admissions and/or double features. Therefore, producer-distributors[2] must consider the prospect of more widespread double features resulting in a lowering of product price, and, from their standpoint, this price lowering can be justified only if the net return per picture is maintained (because of the increased number of play dates per picture) and if quality of product is not impaired thereby.

It is contended by distributors in the New England area that the decrease in rentals per picture has been offset by the added number of play dates made available through double features. Yet the majority in the industry claim that in most localities distributors would not find this to be true—with the exception of increased return on inferior product in every double-featuring area. Opinion seems to be based on the assumptions that in New England there is a greater number of thrifty, quantity shoppers than elsewhere, and that, in many other parts of the country, audiences seem to prefer a 1½- to 2-hour entertainment of films to the usual 2½- to 3-hour double-feature program. The tendency to audience disapproval of an overlong film program is more noticeable in some of the midwest and western localities, but is keenly felt everywhere in the summer, although theater-cooling systems have partly offset this seasonal factor. However, the question as to the obtaining of the maximum revenue from each picture deserves further consideration.

The inherent difficulties of film producers' constant efforts to reach popular fancies have resulted and always will result in some failures, in spite of the best of intentions, ideas and producing skill. No studio turns out all "hits"; some product is bound to be of mediocre or downright poor drawing power. Double featuring affords a means of greater return on these mediocre pictures through the greater number of play dates than is possible in a single-feature territory. This is noticed in the impetus given the sales of smaller independent producers in double-feature areas and in the commendation of double features by producers of inferior product.

The increased number of play dates through double features would reduce the possible aggregate return on better-

[2] For all practical purposes, their aims will coincide; nearly all major distribution is carried on through producer-owned exchanges.

quality features under a single-feature system, shown singly at higher rentals. Under double features, this better feature, while providing the major portion of the program's drawing power, would lose possible return because of the second feature's rental,[3] assuming the usual double-feature bill of one strong and one weak feature. In other words, part of the return rightfully accruing to quality product would, under widespread double features, be diverted to mediocre and poor features.

Quality-product Problems

The use of mediocre films as a second feature is the most dangerous tendency of double features, not only because it reduces film entertainment to a quantity appeal, but also because of indicated downward effects on picture-production budgets arising from reduced rentals. Quality in product, however elusive, is the foundation of the industry. Any factor tending to injure product quality must be deplored. Certainly many film-production budgets have been grossly high in the past; waste and extravagance in production was all too apparent. However, in the past two years the downward revision of production budgets has been precipitous, and those close to the industry insist that further cuts will greatly injure product quality. Although certain low-cost films have had high quality and good drawing power, these seem to be exceptional cases. In general, it must be admitted that widespread double features, in reducing the return possible for quality pictures, would tend toward lowered production budgets for quality features.

A large portion of the return of a quality feature comes from the first- and intermediate-run theaters, which pay high rentals for the privilege. Should double features become more widespread, a greater portion of the country's audiences might be inclined to wait for the showing of a quality picture or two on a double-feature bill. Thus, one effect of double features would be to decrease the number of first- and intermediate-run houses.[4] And for these large-rental-paying theaters would be substituted the houses offering two features, which generally charge lower admissions than do first-run houses. The opposition of major producers to the double feature can be readily understood; it threatens to reduce their film rentals and endangers their exhibition holdings—many of which are first- and intermediate-run theaters. More widespread double features thus threaten a still further downward revision for quality-feature production budgets and must, therefore, be considered as a threat to quality of product.

In addition to the dangers of lowering quality-feature rentals, widespread double features would greatly reduce the sales of short film-subjects, such as newsreels, comedies and travelogues. While some double-featuring houses show one or more short subjects on each bill, the picture budgets of these houses will permit only extremely small rentals for these additions to the pro-

[3] This conclusion is verified by the outspoken distaste, for double features, of the few producers responsible for nearly all quality in product. Late indications are that, even in double-feature areas, quality product will be sold on such a stiff percentage booking arrangement that exhibitors will have a hard time getting satisfactory arrangements for a second feature. The better producers seem to be rebelling at the prospects of support for mediocrity in films.

[4] This is partly borne out by a consideration of the Boston area, with a drawing population of about 1,500,000, but with only four major first-run theaters, and only seven houses in the area on a single-feature basis.

grams. While many short subjects have been of such lamentably poor quality as to become almost a liability to a film program, the effects of double features in reducing playing time and rentals of the better-quality short subjects should be deplored.[5] The entertainment value of diversified and high-quality short subjects should not be underestimated; their production should be encouraged, not menaced.

Quantity Demand Endangers Quality of Product

Proponents of double features claim that present production schedules furnish an output sufficient for double features, while opponents claim that the opposite is true. The present output does appear sufficient for double features, if the Boston area may be taken as a criterion; extremely dense distribution is there obtained through the fact that nearly every theater (aside from the seven remaining on a single-feature basis) uses about 208 films each year.[6] The present output appears to be sufficient for widespread double features in subsequent-run theaters only if the distribution set-up permits the showing of any one picture in nearly every theater under reasonable protection arrangements. This appears to be the situation in New England, and might be made so elsewhere. However, if Chicago may be taken as typical of many other exhibition areas, such situations are unlikely on a nation-wide scale because of the tangles of booking favors in distribution. Product shortage has been acute at times in such double-feature areas as Chicago and Cleveland and is always a problem in New England in spite of the dense distribution of each picture in that area. Double features would maintain, if not heighten, the present demand for quantity studio output, and therein lies another criticism of the policy.

The motion-picture industry has made tremendous strides in improvement of directorial, acting, photographic and recording technique, but as rapid has been the rise of public standards of appreciation. However, film-production technique must have stories to work upon, and story selection is the most pressing problem of production today; public standards demand more than mere production technique applied to hackneyed plots. A major studio's problems in the production of some 50 new and different films each year must be appreciated; one of the main faults with the industry is that, in spite of all strivings for a quality emphasis, production schedules are burdened by quantity demands. Because of the necessity of adhering to the number of films contracted for, and release-date stipulations, every studio has entered into the production of some films which for one reason or another should not have been attempted at that time. The industry's man power is too limited in numbers and ability to supply the requisite quality under the present demand for quantity. Therefore, widespread double features—in maintaining or heightening the present quantity demand for films—would be decidedly detrimental to the all-important quality of output.

Quantity output has been forced upon Hollywood film factories by the

[5] Already, the increase in double features has been indicated as the cause for an approximate 27% reduction of production budgets for Laurel-Hardy comedies by the Hal Roach Studios. *Motion Picture Herald*, Nov. 21, 1931, p. 32.

[6] Two changes of program each week of two films each. It is interesting to note that in the Boston area most of the 208 pictures of any one theater can be found on the programs of nearly every other theater during the year.

quantity demands of distributors and exhibitors. It must be noted that the strongest voice in this quantity demand has been that of the producer-owned chain. These chains were formed principally to assure producers of an outlet for product, and each producer evidently thought that he could supply his chain with sufficient quality product. That the situation has become reversed is shown by the following table of interbookings[7] that represented national purchases in most cases for the 1931–32 season of the major chains; sectional interbookings were even more inclusive:

Chain	Product Bookings
Publix	Fox, Metro-Goldwyn-Mayer, R.K.O. Radio, Warner-First National, Paramount.
Warner	Columbia, Fox, Paramount, R.K.O. Radio and Pathé, Universal, Warner-First National.
Loew	Fox, Metro-Goldwyn-Mayer, Paramount, United Artists, Warner-First National.
Fox	Fox, Metro-Goldwyn-Mayer, Paramount, R.K.O. Radio and Pathé, Warner-First National, United Artists.
Radio-Keith-Orpheum	R.K.O. Radio, Pathé and Universal.

These interbookings furnish one of the most convincing clues as to the present paramount demand for quality, and also as to the inability of a single producer to furnish 52 or more quality features each year. Producer-owned chains, in which are many first-run houses in key situations, demand the highest obtainable quality in product—now obtained through extensive interbookings. Producers have admitted that they cannot mix quantity and quality according to the present requirements.

Consequences to Exhibitors

Double features would be decidedly detrimental to the first-run and most of the intermediate-run theaters. These houses would, in the main, definitely "trade down" in their entertainment retailing, should they change from a quality to a quantity appeal. The arguments against such houses turning to double features are obvious; it would appear that almost everything would be lost and but little gained by the practice—except in the weaker intermediate-run theaters. It is in the latter and in the subsequent-run theaters that the policy of double features exists as a pressing problem.

It was previously stated that the effect of a start in double features is often to increase patronage, but this increase will tend to fall off as competitors are forced to take up the practice in self-defense. As the situation boils down, each exhibitor must cover the audience "bonus" out of his margin of profit, and increase the intensity of his continual struggles for lower-product rentals. But aside from the operating costs of the policy of showing two features, audience reactions should be considered.

Every exhibitor should have his entertainment policies in accord with the prospective clientele to whom he is appealing. That clientele's characteristics and buying motives in film entertainment must be analyzed and satisfied for exhibition success. All too little of this is done today.

Double features will attract the quantity buyer of films. This type will patronize two features in preference to a single feature, but it is very unlikely that the number of people who will make quality secondary to quantity is considerable. Film-quantity buyers do not appear sufficient in numbers to warrant most changes to double features at any sacrifice in quality. At least one quality film must be shown to assure the drawing

[7] *Motion Picture Herald*. August 15, 1931, p. 16.

power of a double-feature program, and the second feature will attract some quantity buyers.

Would not the prospects of sitting through a mediocre or poor picture turn away many discriminating film goers?[8] The answer surely is in the affirmative. Many parents who take their families to one feature would not consider having the children attend the second feature on that bill if that feature were undesirable for one reason or another. Moreover, if the prospective admission payer has seen one picture on a double bill, that admission is nearly always lost.

The two-feature program is held by proponents to provide the necessity for diversity in entertainment. Split appeal (through endeavoring to attract a different audience by each of two pictures) can backfire through the negative appeal of the other feature, however. The possibility of the unity of appeal of a single strong feature, well flanked by good short subjects and/or live entertainment, appears unquestionably to be a stronger policy for motion-picture exhibition in general.

Another very real objection to double features is the danger of satiation of the film-going public. Too much entertainment of one sort at one "dose" may prove to have serious consequences. This was indicated in the alarming loss of patronage by some of the houses that attempted three features on one bill, and the same consequences are claimed for two features in the long run by most showmen—especially in the aforementioned areas that seem to prefer shorter entertainment programs. This satiation may take the form, for instance, of the spending of only one evening a week in picture attendance instead of two evenings to see two features, or genuine satiation with films as entertainment, with a consequent turning to other forms of amusement. The sitting of an audience through two complete long stage plays is hard to imagine. As films are constantly being improved as an entertainment medium, the showing of two features at one sitting appears to be distinctly contrary to farseeing exhibition policy. As a form of entertainment appealing to so many intangibles, surely motion pictures must assiduously avoid any such satiation of audiences as would result in a tremendous decline in the public demand for films. Moreover, satiation would be intensified by the usually poor quality of the second feature shown; double features in every locality have stimulated the demand of exhibitors for cheap pictures.

New England has been cited as the area in which double featuring has been reported as a monetary success, although the intangible effects of the practice may prove more undesirable than is generally anticipated. Representative New England exhibitors and distributors are of the opinion that double features are "bad show policy." The results in Chicago may be cited to illustrate some of the more dubious effects of this exhibition policy.

Independent exhibitors were the first to introduce double features into the highly competitive Chicago area; apparently they adopted the practice as a competitive weapon to offset what they considered unfair and too lengthy protection allowed certain first-run and intermediate-run chain houses. The results were satisfactory to the inde-

[8] These difficulties may be obviated, as is done in the Boston area, by having the newspapers announce the times of each feature shown. The fact is that this means of notifying prospective audiences is far from a complete success—as is evidenced by the number of telephone and personal calls received in the Boston area as to the starting times of the features shown.

pendents at first, and they stood firmly opposed to any such regulation of double featuring as was proposed at a uniform-zoning conference held in Chicago in the summer of 1930. However, double features proved a game that two could play. The powerful Publix-Balaban and Katz chain then adopted the policy in its *de luxe* intermediate-run theaters and in its subsequent-runs, and this circuit's booking advantages soon had the independents crying for relief.[9] Product shortage has been acute at times, and the majority of exhibitors and distributors strongly denounce double features as an evil. The net results in this area appear to be no greater aggregate grosses after double featuring for exhibitors or distributors, and a general lowering of motion pictures as an entertainment medium. The long-run considerations of the latter factor are particularly dangerous, and far more than offset whatever advantages have accrued to the few Chicago theaters which may be momentarily benefiting from the depression bargain appeal of double features.

Conclusions

The practice of double features only sidesteps and aggravates the real problem confronting the motion-picture industry—namely, that of product quality. The film-going public is becoming increasingly "quality-conscious," and the quantity appeal of two features is faulty entertainment policy for most theaters in the long run. The practice may have apparent initial success, but long-term consequences tend to negative such success. Double features give every indication of proving a serious boomerang if allowed to spread unchecked.

In the interest of the greatest returns to the entire exhibition set-up, first- and intermediate-run theaters should operate on a distinctly quality basis with single features—bolstering the single feature with quality short subjects and live entertainment when necessary.[10] Given fair protection, these theaters can maintain a sufficient clientele for success. Double features can be excused as an exhibition policy in subsequent-run houses only in the more overseated areas; there, if the two features are wisely chosen, the practice holds promise of success in offsetting the time advantage of previous-run houses and in the stimulation to attendance by today's bargain shopper. The exact number of an area's quantity-film shoppers is, of course, highly speculative and a problem to be determined locally with a thorough insight into the local public's buying characteristics. In some situations the response to double features has been disappointing (as, for example, in Milwaukee, Racine, Cleveland, and Kansas City), and the opposite has been true in other cases (notably New England and Montreal). This illustrates that the policy is not subject to blanket disapproval or commendation; it must be dealt with locally and individually.

Possible Solutions of the Problem

The nature of the problem of double features is such that a passive attitude by the motion-picture industry may

[9] In the *Motion Picture Herald* of Nov. 14, 1931, p. 29, Aaron Saperstein, President of Allied Theater Owners of Illinois (independent) states: "Chicago independent theater owners demand that double featuring cease or the show business in Chicago will be ruined."

[10] The Motion Picture Herald, Nov. 14, 1931, p. 29: "Approximately 200 Chicago theaters are now on a double-feature policy, and of this number, it is estimated that not more than 30 theaters are retaining the policy voluntarily."

prove fatal to everything for which the industry is striving. The spring of 1932 (the 1932–33 buying season) appears as the most propitious time for organized sentiment in the industry: (1) to make itself felt in the stamping out of double features in those areas where it is clearly undesirable; and (2) to take steps for control of the practice in those areas where it has possibilities.

As might be expected, prospects for concerted action in this highly competitive industry are rather slim, but not impossible. Practically every producer and distributor is violently opposed to double features, and the majority of exhibitors, both chain and independent,[11] have gone on record as opposed to the policy. Producers' pressure is felt through their distributors, and the latter, fearful of concerted action by agreement because of laws against conspiracy in restraint of trade, feel that control or elimination of the practice lies with exhibitors. Exhibitors, however, feel that distributors, through the control of the product, are in a better position to act upon double features. If such "buck passing" is allowed to continue, little will be done.

Amelioration of the double-feature evil calls for intelligent cooperation of all branches of the industry. Small competitive jealousies must be disregarded in the interests of the whole. To stamp out or control double features, local exhibitors must cooperate, together and with distributors, to ascertain the desirability and place of double features in their area; the problem is one for local solution, as is the question of what constitutes "fair" protection. An intelligently conducted "round table" in each area to focus the exhibition issues would go a long way toward solution of the problems.

Illustrative of what can be done in exhibitor cooperation, the eradication of double features in Racine, Wisconsin, may be cited. Such cooperation of exhibitors to eliminate double features is, unfortunately, rare. Exhibitors have cooperated in Cleveland and in Northern California to restrain double features and confine the practice to subsequent-run theaters. Cooperation of distributors with exhibitors in curbing the practice in Milwaukee is indicated[12] by distributors' agreeing to release exhibitors from bookings for second features, provided that the canceled features may be replaced by short subjects. The incentive to exhibitors to adopt this latter plan of substitution can be greatly increased if producers will supply[13] special-interest shorts and/or short subjects of sufficient quality and quantity. However, in most cases, actual pressure must be brought to bear by distributors before double features can be eliminated or controlled. Such pressure can take the form of: (1) individual distributor action to raise picture rentals to double-featuring houses; (2) more widespread use of percentage film rentals, and penalizing double-featuring houses by not allowing the second feature to be deductible as house overhead before the percentage arrangement applies; (3) direct refusal to sell to double-featuring houses,[14] or (4) confining the practice to the desired subsequent-run theaters through protection arrangements, by retarding,

[11] Chains are largely producer-distributor controlled. The Allied States Association, the largest organization representing independent exhibitors, is opposed to double features.

[12] *Variety*, March 29, 1932.

[13] As is indicated in *Variety*, February 23, 1932.

[14] As Paramount and Metro-Goldwyn-Mayer have done at times in some areas—*Motion Picture Herald*, Dec. 5, 1931, p. 14.

for example, the availability dates of product for theaters which double feature.

The characteristics of each locality must determine the means to be employed in regulation or elimination of double features, and clearly the whip hand is with the distributor because of his control over the sale of product. The motion-picture industry is unique today in that its problems lie to a greater extent in production than in distribution; the demand exists for pictures at fairly high prices, provided that quality is forthcoming. Because of the indicated effects of widespread double features in aggravating production problems, this problem of distribution must be controlled by the intelligent cooperation of all concerned. If exhibitors in a locality cannot control double features, then it is up to distributors—and very small is the number of distributors that supply the quality of films essential to successful exhibition—to cooperate legally in elimination or control of the practice.

THE DOUBLE-LIABILITY ASPECT OF BANK STOCKS

By A. W. PIKE

RECENT years have witnessed a tremendous and regrettable increase of bank suspensions. Stockholders in these unfortunate institutions have watched despairingly their certificates shrink not only into valueless paper, but moreover, and far more important, become indisputable evidence of additional liability. To many individuals the contingent liability of bank stock appears unjustified, and certainly there is not a little confusion regarding this exceptional departure from the usual characteristics of corporate stocks.

Although it cannot definitely be said how much stockholders in suspended banks have been assessed in the past ten years, the amount, probably nearly $350,000,000, will justify contemplation of the double-liability feature. The majority of bank shareholders are completely uninformed concerning the additional contingent liability that accompanies nearly all bank stocks; realization of liability usually occurs to stockholders only upon the closing of their particular institution.

EXHIBIT I

BANK SUSPENSIONS*

Year	Number	Capital†	Deposits†
1921	501	$ 22,802	$ 196,460
1922	354	13,743	110,721
1923	648	21,943	188,701
1924	776	28,358	213,338
1925	612	24,441	172,900
1926	956	32,804	272,488
1927	662	24,763	192,891
1928	491	19,715	138,642
1929	642	32,254	234,532
1930	1,345	111,643	864,715
1931‡	2,298	.....	1,691,510

* From the *Annual Report* of the Federal Reserve Board, 1930.
† In thousands.
‡ *Federal Reserve Bulletin*, March, 1932, p. 156.

What Is "Double Liability"?

Confusion relating to this feature results from our banking structure, which, because of our dual form of government, includes both national and state banking systems. All national banks operate under the National Bank Act, which uniformly provides for double liability in Section 5151 which states:

> The shareholders of every national banking association shall be held individually responsible, equally and ratably, and not one for another, for all contracts, debts, and engagements of such association, to the extent of the amount of their stock therein, at the par value thereof, in addition to the amount invested in such shares . . .

Double liability in regard to state banks, however, is entirely a matter of separate state legislation. In general, state laws conform with the example set by the National Bank Act, and the large majority of state bank stocks carry double liability. Nevertheless, there are noticeable variations in the technical aspects of different statutes, and stockholders in some states are not doubly liable.

Double liability as it exists today has for its only purpose the protection of depositors. Helderman, in his study of

the origins of national and state banks,[1] vividly describes how the double-liability feature grew during the formative periods of American banking. Depositor protection found its first legal expression in 1837, when the Safety Fund Act of 1828 was amended.[2] The act created a fund by assessment for the purpose of paying debts of insolvent banks, the framers having particularly in mind losses arising from note issues rather than from deposit banking. The amendment to the act specifically reserved one-third of the fund for depositors.

The principle of stockholder liability had not found expression even as late as 1831, as Mr. Benton quite cogently pointed out.[3] Its suggestion occurred in May, 1832, as a result of considerable agitation concerning renewal of the charter of the Second Bank of the United States, which expired in that year. The Senate had appointed a " . . . committee to inspect the books and examine into the proceedings of the bank."[4] This committee presented a bill, recommending renewal of the charter, which was taken up in committee of the whole of the Senate for consideration. During these proceedings, Mr. Benton moved several amendments; the third, " . . . rendering stockholders liable in their private capacity *to the amount of their stock*, for any violations of the engagements of the bank."[5] Although his proposal was defeated, 33 to 11, a definite move had been made.

This movement gradually gained headway. In 1834, Indiana adopted the liability clause for bank-stockholders,[6] and three years later Michigan made directors and stockholders liable in *all* insolvencies by passing the so-called "Killer of Monopolies" law.[7] Ohio's provision in 1842 for directors' and stockholders' joint and several liability was so severe that no banks undertook to organize under that statute. Florida, Missouri, Louisiana, Wisconsin and other states gradually made liability provisions.

Causes of the Liability Movement

The first annual report of the national bank commissioners[8] declared that the great error of the old systems was the lack of individual liability. After the panic of 1837 had clearly demonstrated that noteholders were insufficiently protected, stockholders' liability was widely discussed as a relief measure. The primary cause thus is seen to have been billholder protection.

Immediately following, however, came a second and decided impetus. The Free-banking System of New York, inaugurated in 1838 with no liability features, protected noteholders by other means. Two years later, when the state definitely committed itself to the principle of incorporation, laws were passed providing that "stockholders shall be individually liable for all debts and liabilities of every kind." This sequence shows the second cause, namely, the public's suspicion and antagonism toward the economic transition of American business from the partnership to the corporate form of organization. People

[1] Helderman, L. C., *National and State Banks*. Boston: Houghton Mifflin Co., 1931.

[2] McCahan, David, *State Insurance*, Philadelphia, University of Pennsylvania, 1929, p. 195.

[3] Helderman, L. C., *op. cit.*, p. 154.

[4] Moulton, R. K., *Legislative and Documentary History of the Banks of the United States*, New York, G. & C. Carvill & Co., 1834, p. 97.

[5] Moulton, R. K., *op. cit.*, p. 100.

[6] In fraudulent insolvencies bank directors faced unlimited liability; stockholders were liable to an amount equal to their shares.

[7] It is interesting to note that by this law directors were liable to the extent of individual property, and stockholders to the amount of stock held.

[8] Helderman, L. C., *op. cit.*, p. 43.

were afraid of the "soulless corporation," and legal developments which limited individual liability in a corporation increased their fear. The public was accustomed to partnerships wherein individuals were fully liable for their obligations. As Helderman[9] explains, "The United States Bank, with its $35,000,000 of capital and many branches, was a 'monster' in the eyes of that generation."

The development of the double-liability feature must be considered in relation to the growth of the incorporation movement. Noteholders of insolvent banks believed that unjust exemption was being allowed to stockholders. This feeling, intensified by passage of the National Bankruptcy Law in 1841, resulted in a general recognition of stockholders' liability as a standard provision in the free-bank acts of the fifties. Ultimately the principle was included in the National Bank Act of 1863.

Liability for Capital Impairment

R. E. Badger, a prominent author on investment principles, describes this liability by saying, " . . . in case a bank gets into financial difficulties, the persons in whose name its stock stands are liable for an assessment . . . equal to the par value of their stock."[10] This statement is extremely misleading without a discussion of prior liability in case of capital impairment; many stockholders are unaware of legislation concerning their liability in such event. Courts consider the capital stock of a bank as a trust fund for the benefit of depositors and creditors. It must be kept unimpaired, for which purpose an assessment, not in excess of the par value of the stock, may be levied on the stockholders in case a deficiency arises through losses or otherwise.[11] The bank-shareholders' liability is thus seen to be more onerous than that of stockholders in general.

This voluntary assessment in national banks must be made by stockholders themselves; if made by directors alone, it is void.[12] Furthermore, it must be accomplished within three months[13] after notice by the Comptroller of the Currency. For example, stockholder A is voluntarily assessed for a capital deficiency in the B National Bank, the assessment amounting to one-half the par value of his holdings. Later, when the bank again gets into difficulties, he pays another 75% assessment. At this point, after having paid more than the par amount of his stock, is his liability under Section 5151 as stated above satisfied? It is *not*. The United States Supreme Court[14] makes a clear distinction between voluntary assessments for the purpose of avoiding liquidation, and those by which shareholders are involuntarily compelled to discharge debts arising in case of suspension. Thus, if Bank B ultimately fails, and a full assessment—*i.e.*, an additional 100% on the par value of the stock—for debts of the bank is levied by the comptroller,

[9] Helderman, L. C., *op. cit.*, p. 155.

[10] Badger, R. E., *Investment Principles & Practices*, New York, Prentice-Hall Inc., 1930, p. 516.

[11] 7 *Corpus Juris* 492.

[12] 7 *Corpus Juris* 768.

[13] National Bank Act, Sect. 5205 [as amended 1876], " . . . every association whose capital stock shall have become impaired by losses or otherwise, shall, within three months after receiving notice from the Comptroller of the Currency, pay the deficiency—by assessment upon the shareholders *pro rata* for the amount of capital stock held by each . . . if any shareholder or shareholders of such bank shall neglect or refuse, after three months' notice, to pay the assessment . . . it shall be the duty of the board of directors to cause a sufficient amount of the capital stock of such shareholder or shareholders to be sold at public auction . . . to make good the deficiency . . . "

[14] *Delano* v. *Butler*, 118 U. S. 634, 7 Sup. Ct. 39.

A will have lost more than double the par value of his stock in addition to his original investment. By neglecting or refusing to meet the first assessment, however, A may escape more than an original investment loss on those shares which the bank finds it necessary to sell in order to meet his portion of the deficiency as explained in footnote 13. No action at law for assessment will lie against A in the event of partial capital impairment.

In many state banks, stockholder A would not fare so badly. Some statutes provide that the capital stock may be reduced after an impairment, on condition that such a reduction does not bring it below the required minimum. Others permit no action against stockholders until the capital is reduced below the amount required by law or by the articles of incorporation. Different statutes vary concerning assessment, enforcement, time limits, *etc.* In general, nevertheless, state laws provide for the sale of A's stock if payment is not met; if the deficiency is not repaired, superintendents of banking are authorized to institute liquidation proceedings.

When, in liquidation actions, it becomes apparent that assets will not meet liabilities, the receiver levies assessments. Generally these are for the full par value of outstanding stock; if it proves to be in excess of the amount required for liquidation, dividends are returned to stockholders at the close of affairs. Such a return seldom materializes. The assessment is usually enforced through a suit at law, since in most suspensions the disparity is so great between assets and liabilities that the full amount of statutory liability is due, and there is no need of an accounting in equity.[15] Variations are found in different states regarding ownership identification, continuance of liability after stock transfer, fraud, illegality of organization, *etc.* For a definite understanding of a shareholder's position and defenses in any particular state, a substantial investigation of his own state law is necessary.

Stockholder Resentment vs. Justification of Depositor Protection

Not a few bank-stockholders genuinely resent double liability, believing that its purpose, depositor protection, is unjustified. The bank-shareholder, after all, is no less an entrepreneur who faces the risks of business than are his friends who own stocks in other forms of business endeavor. Why must he be forced to guarantee depositors their invested funds—be made an exception to the rule of corporate liability? For those who must have absolute security, does not the United States Government make provision with its postal-savings department paying 2½% interest? It would seem to be reasonable that those desiring a higher return should not have also the protection which is the intention of stockholders' double liability. Although experience indicates that this theoretical protection does not exist, still, is the purpose of the rule justified? Indeed, in 1841, the Bank Commissioners, commenting on this purpose, said, "No man is bound to deposit in a bank unless he pleases, and if he voluntarily assumes in this manner to make it his debtor, no good reason can be perceived why he should be entitled to greater protection than that of the bank to which he gives credit."[16]

It is important to note, however, that deposit banking at that time did

[15] 7 *Corpus Juris* 512.

[16] Helderman, L. C., *op. cit.*, p. 13.

not play the important rôle it enjoys today. When this feature grew in banking circles, it became evident that the *fiduciary relationship between depositor and bank* demanded much more than the policy of *laissez faire* had to offer; protection became imperative. Furthermore, it was an easy matter to continue the provisions of the double-liability feature, inasmuch as it was already in force, while its former purpose (noteholder protection) was rapidly disappearing after currency provisions of the National Bank Act had become effective.

As a result, our banking structure has been built on the principle that depositors be fully protected. Banks are quasi-public institutions—statutes creating protection, primarily established for the benefit of depositors and other creditors, have served a general public purpose, *viz.*, to give stability to the banking system and to place it on a strong foundation. One of the prime purposes of a bank is to offer security for the keeping of funds that are temporarily not needed. The principle of depositor protection should be maintained; whether or not double liability of stockholders is the best method of securing this purpose, is another question.

National and State Bank Experience with Double Liability

The experience of national bank receivers in collecting double-liability assessments has been very unsatisfactory. From the date of the first national-bank failure in 1865 to October 31, 1931, 1,786 national banks have been placed in the hands of receivers. Eighty-four of these were restored to solvency, and 989 have been entirely liquidated and the trusts closed. Total figures[17] are:

Capital of the banks entirely liquidated (989)	$109,582,920
Assessments levied	73,198,240
Assessments collected	35,513,250
Collections from assets	359,943,235
Available for distribution	395,456,485
Claims proved	329,105,973

These figures, which do not include expenses of liquidation, show that *collections have averaged only 48.5% of assessments levied.* Furthermore, the amount collected through the double-liability feature has been only 9% of the total finally available for distribution and expenses of liquidation, and only 10.8% of claims proved.

It is generally conceded that state legislation is typically somewhat less stringent than that of the Federal Government; reserve requirements are less substantial, examinations not so rigorous, and policies more liberal. Liability assessments should, therefore, be expected to yield better average returns in national than in state banks. A rough sampling of state figures bears out this assumption.

Conservatism has dominated Massachusetts' banking structure in general, and the wide diversification of New England industry has helped keep trust-company[18] failures low. Failures have been comparatively few, and Massachusetts banking enjoys an enviable position in this respect. Yet, in three recent liquidations, the percentage of collections on stock assessments has been conspicuously lower than the average of national experience:

1. Hanover Trust Company	
Assessed	$400,000.00
Collected	77,488.05 (19.4%)

[17] From the report of the United States Comptroller of Currency, 1931.

[18] There are no so-called state banks in Massachusetts; state banks use the title "trust company."

2. Prudential Trust Company
   Assessed..... $200,000.00
   Collected..... 81,276.58 (40.6%)
3. Tremont Trust Company
   Assessed..... $948,700.00
   Collected..... 65,415.38 (6.9%)

Data from the records of the office of the Commissioner of Banks, Massachusetts.

Failure and Disadvantages of Double Liability

Double liability fails as a protective device primarily because of the peculiar nature of typical bank structure. This structure is pyramidal in form, it being not uncommon for a bank with $2,000,000 of capital stock to owe depositors $60,000,000. With this proportion existing, the reader easily sees the absurdity of the "protection" which the depositor theoretically receives from double liability. This "protection" becomes even more ridiculous when it is remembered that, should the bank fail, experience would predict possible collections from shareholders of only $1,000,000 or less. In this instance the double-liability feature gives depositors protection only to the extent of 1.6% of their money.

The poor collection record results from two factors: (a) extensive distribution of bank stocks, and (b) technical evasions of the law. The wide scattering[19] of stock has led, in many instances, to inability to meet the contingent liability. Furthermore, extensive distribution creates tremendous obstacles of assessment, and in not a few instances have stockholders, foreseeing disaster, cheated depositors through evasion of the law. In this respect property-transfer rights, bankruptcy, sale of stock, *etc.*, have proved fairly effective mediums. In cases where majority owners are officers and directors, it is often true that all private means have been used in an endeavor to avert the failure, with the result that nothing is left with which to meet the assessment.

Wide dispersion of stock has greatly minimized the protection afforded by double liability because of the increase of time delays, court expense, and legal fees. The expenses of assessment and collection constitute a very substantial portion of the entire liquidation expense. The three Massachusetts failures cited above are startling in that:

1. The Hanover Trust's total liquidation expenses were 3.2 times total collections from stockholder assessments.
2. The Prudential Trust's ratio was 2.2.
3. The Tremont Trust's ratio was 6.3.

Compiled from the Abstract of the *Annual Report* of the Commissioner of Banks, Massachusetts, 1931.

Can depositors be said to be protected when expenses overshadow stock collections by these margins? Assuredly not. Additional impracticability is resulting from chain banking which is fast assuming magnitude. In these systems, liability extends to the holding company but does not continue to the individual shares of that company. The protection thus vanishes. W. C. Woods, former Banking Commissioner of California, states in this connection:

> The law has demonstrated the fact that majority ownership of bank stock by a corporation will defeat the double-liability statute for the reason that the bank will not be permitted to fail by the holding corporation until that corporation is itself insolvent, at which time no benefits can accrue under the law to creditors.[20]

[19] Many bankers deemed this advisable, thinking the owner of a few shares would everlastingly work his fingers off to bring business to the bank. It has since been found that small shareowners are practically worthless in this respect, and that the idea is a fallacious one.

[20] *Journal* of the American Bankers' Association, December, 1929, p. 564.

When the liability feature is impartially considered and seen to be merely a transfer of funds from stockholders to depositors (with a considerable portion consumed by its own expense of collection), it seems unfair. Shareholders after all are not the direct causes of failure—in fact, many times they are entirely unacquainted with the bank's operations. Some would justify the double-liability feature on the ground that it makes for better bank operation, that it warns a would-be lethargic investor to watch the bank, to contribute to its business, and to maintain proper management. In theory this is a reasonable assumption, but in practice that is not the effect. Stockholders customarily know little or nothing concerning banking principles; their interest is usually regarded by the directors or managers as a nuisance rather than a help to sound management.

Stockholder liability is unjustified when cognizance is taken of the exclusive control of policies by directors. The widespread distribution of bank stocks has unquestionably made impossible anything resembling an active interest on the part of most stockholders. From them decisions of policy and responsibility are far, far removed; statements of condition reveal little concerning the bank's true position. To most of these individuals a warning of impending trouble arrives only after the damage has been done through no fault of their own; to not a few the only warning consists of a full assessment. Should the poor policies dictated by the majority control in a bank result in suspension, the minority stockholders would be liable even though they had endeavored their utmost to remedy the situation. The law is not only inefficient, but also unjust. In addition, management is hindered by a form of stock liability which prevents, in times of crisis, the procurement of much needed additional capital.

Alternative Plans for Protecting Depositors

Various other plans for depositor protection have been propounded from time to time, but the full possibilities and implications of such proposals (usually insurance and bank-guarantee schemes) have not been sufficiently considered. Insurance protection burdens successful institutions with the difficulties of failed banks and thereby places a premium on inefficient and careless banking. On the other hand, guarantee plans force successful banks to bail out the failed ones. Because of the insufficiency of central funds to cover losses, no such plan has ever been successful.

A third, and more logical, thought requires stockholders, at the time of purchase, to contribute their contingent liability. These contributions would be placed in the hands of a trustee, interest to be returned to shareholders and the principal left untouched except in case of liquidation. Unquestionably this would make for better protection of depositors, but only to approximately ten *per cent*, and it would greatly hinder the sale of bank stock. Moreover, stockholders would be forced to bear a burden which the writer considers unjust. In addition, banks would show a tendency to operate on as small a capital margin as possible —the ratio between stock and deposits ever widening, with a corresponding reduction of protection.

The above plans do not attack the problem correctly. They are devices which protect the depositor *after suspension* instead of means to *prevent*

serious failures. Surely the latter is the better method of shielding the depositor from loss. Double liability as it exists today offers practically no protection and should be scrapped. In its place the following suggestions, which strive toward prevention, are offered:

1. Liability for capital impairment as it now exists.
2. More stringent bank examination which will force liquidation before capital and surplus are wiped out by losses.
3. Surplus requirements should be established at higher figures in order to increase the buffer which protects depositors.
4. Regulations establishing a relation between the capital stock of a bank and its deposits should be created. This should be placed at approximately 1 to 10. Then, by stringent examination, a constant sizable buffer will be maintained for the depositor.
5. The responsibility of boards of directors should be extended so as to cover cases of obviously poor management. This could be accomplished by giving receivers the power during liquidation to determine and fix the cause of insolvency. At present this is not possible.[21] Liability should not be so severe, however, as to make it difficult for banks to obtain the services of responsible men.

At present, examining forces are entirely incompetent to meet the situation. There are 75 national banks to every national examiner; some states have as high a ratio as 100 state banks to an examiner. As a result only a loose check can be maintained; many banks are examined only once in two years. Political influences are detrimental and have crept into many departments. Examiners are grossly underpaid in view of the man-calibre needed. Furthermore, state banking departments are considered to be merely "stepping stones" by many examiners; with the result that, while endeavoring to obtain a better position, the examiner is tempted to acquiesce in the desires of those in charge of institutions.

The great wave of recent failures will most certainly result in federal and state legislation unless steps are taken by bankers to eradicate obvious deficiencies Provisions in the Glass and Steagall banking bills have already aimed at this point; further restrictive legislation is indeed likely to cramp commercial banking severely and should be avoided. It is too much to expect that good banking can be obtained through legislation. More laws will not effect the cure; capable management is the only solution. It is ridiculous to believe that such management can be obtained through the examination and licensing of bankers by federal or state governments. It is believed, however, that the rural banking system can be strengthened by an extension of limited branch banking under close government supervision. Such a system would grant to the small bank a degree of competence which heretofore has been unobtainable in most instances.

The banking fraternity would do well to segregate examining departments from political influences, insist on more efficient and frequent examination, and endeavor to close failing institutions before capital is wiped out. Strict rules and increased discrimination in the granting of charters, as well as higher standards of supervision and examination, should be encouraged by bankers themselves.

[21] *In re Union Bank of Brooklyn*, 97 N. E. 737.

INTERNATIONAL COOPERATION AS A SOLUTION OF THE SHIPPING PROBLEM

By JOHN S. MANUEL, JR. AND WILLIAM S. MANUEL

NATIONAL pride, mercantilist tradition, the desire for naval security—all have combined to produce the anomalous situation of extensive shipbuilding programs, actually being carried out in the major maritime countries of the world in spite of the greatest surplus of tonnage the shipping industry has ever seen. Unprofitable conditions, caused largely by excessive war-time building, have been aggravated by reduced traffic resulting from the slump in world trade, until practically every major line in the world is operating at a loss. Yet the past two years have seen no reduction in the total tonnage of world shipping. Rather there has been a steady increase, and the shipbuilding plans of the near future will place on the North Atlantic a group of liners and superliners which can only render the situation more acute.

The blame does not lie primarily with the industry, but rather with national policies of the maritime countries which have aimed to increase their naval strength through the building up of their mercantile marine. This policy has assumed greater importance with the limitation of naval armaments. It must be recognized that the acceleration of commercial shipbuilding reopens the whole question of naval limitation and the danger of shipbuilding races, which, it is almost universally admitted, is a factor leading to war and which also is a heavy burden on national budgets. However, this article is concerned chiefly with the economic effects of such policies and the power which lies in the hands of the mercantile interests to bring a halt to the movement.

The Present Situation

Since the World War, practically every nation has fostered a building program which each year has increased the world tonnage of merchant ships. The extent of this shipbuilding is to be seen in the comparison of the figures of total world tonnage for 1913 and 1931. In the pre-war year there were 43,000,000 gross tons of shipping. In 1931, the tonnage had increased to 70,000,000. Furthermore, the failure to scrap old and obsolete ships is reflected in the fact that 16,000,000 tons of the present total in active service are twenty years old or more.[1] A comparative table of tonnage for 1921 and 1931, prepared by the National Council of American Shipbuilders, is given in Exhibit 1.

EXHIBIT 1
COMPARATIVE TONNAGE

	July 1, 1921	July 1, 1931
United States:		
Sea Coast	14,697,088	10,998,606
Great Lakes	2,254,930	2,545,341
Great Britain and Ireland	19,571,554	20,302,905
Germany	717,450	4,254,601
France	3,652,249	3,566,227
Italy	2,650,573	3,335,673
Japan	3,354,806	4,276,341
Other countries	15,076,003	20,851,346
	61,974,653	70,131,040

[1] Furness-Withy Report, *The Times*, London, July 24, 1930.

An instructive comparison with these figures may be made by means of the estimate of the Bureau of Foreign and Domestic Commerce of the amount of idle shipping in the three years 1929–1931, shown below in Exhibit 2.

EXHIBIT 2

IDLE SHIPPING IN PRINCIPAL MARITIME COUNTRIES
(In thousands of gross tons as of December 31)

	1929	1930	1931
Idle in home country:			
United States:			
Government-owned	1,559	1,469	1,385
Private-owned	447	1,105	1,646
United Kingdom	521	1,966	2,919
Italy	180	653	807
Norway	12	595	915*
Germany	8	484	790
Japan	90	343	352
Netherlands	4	324	595
France	91	219	743
Other countries	216	813	1,004
Idle in foreign countries	90	305	413
World total	3,218	8,276	11,569

* Exclusive of the whaling fleet totaling 282,000 tons, the bulk of which is idle.

The unfortunate effect of this increase in tonnage has been intensified by a substantial decline in passenger traffic since 1913, resulting in part from the drastic restriction of immigration to this country. Furthermore, while the total volume of seagoing trade has not increased more than 10% over 1913, the combined entrances and clearances of ships show an increase of approximately 30%. Under such circumstances there could be little chance of escape from the cutting of rates and half-empty ships that have decimated the profits of the industry.

Causes of Shipping Expansion

The causes for this rapid and seemingly unwarranted expansion of shipping facilities are only partly economic. The chief force operating over the past ten years has been the desire of various governments to build up merchant marines that will be effective supplements to their navies in times of war, not only for actual combat, but also as transports, supply ships and hospital ships, and to insure access to necessary raw materials not available in the home country. As the limitation of *naval armaments* gains greater headway, the war-time importance of a nation's *merchant marine* grows proportionately greater. Also, it is important to have a sufficiency of mercantile shipyards which can turn out battleships and transports if necessary. Recognition of these facts has led to the rendering of aid in various forms by governments to their merchant marines, such as profitable mail contracts, shipbuilding loans, direct bounties, and restrictions on foreign shipping.

The national policy of building up a substantial merchant marine has been supported on other grounds than military. These arguments center chiefly around the advantages of a merchant marine in developing a nation's export trade; the loss of profits if foreign ships are used; and the danger, in case a war should result in the withdrawal of foreign ships from trade, that too great reliance on foreign shipping may entail loss of valuable export markets and inability to get necessary imports.

The latter danger undoubtedly exists, as was indicated by the disruption of our foreign trade when British ships were withdrawn at the time of the Boer War. Furthermore, a nation by its geographical position and lack of natural resources (such as England and Japan) may require a fleet sufficient to insure the imports necessary for its existence. However, a reasonable

amount of transoceanic shipping, supplemented by coastwise shipping available in time of emergency, should suffice for the United States and most nations as insurance against a shortage. The argument that export trade cannot be developed without a large merchant marine is open to grave doubt, particularly in view of the success of Belgium's export trade with no merchant marine to assist it. Furthermore, there is no loss of profits if it is cheaper to pay other nations to carry your goods than to carry them yourself. In conclusion, these arguments have been greatly overemphasized in the past, seemingly in an attempt to ascribe economic motives to a military or political policy. The shipbuilding interests, with their capacity vastly expanded during the World War, have been particularly active in exerting political influence to keep their yards and factories busy.

At the same time a contributing factor has been the competitive advantage accruing to the company which possessed the fastest and most luxurious superliner. It was observed that when the French Line placed the *Ile de France*[2] in service in 1927, not only did this ship capture a great deal of traffic, but it also lent prestige to the entire line. Likewise the enviable record of the North German Lloyd[3] during the last two years has resulted in large part from the traffic obtained by the *Bremen* and the *Europa*. Other lines are joining in the shipbuilding race, with the backing of their governments. Following is a list of the larger ships under construction or about to be placed in service by the important lines on the North Atlantic:

U. S. Lines	*Manhattan*	30,000	gross tons
	a sister ship	30,000	" "
Cunard	*#534*	73,000	" "
White Star	*Georgic*	27,000	" "
French Line	*Super Ile de France*	70,000	" "
	Champlain	28,000	" "
Lloyd Sabaudo	*Conte de Savoia*	48,000	" "
Navigazione Generale Italiana	*Rex*	50,000	" "
	Dux	50,000	" "

At date of writing, further construction on the *#534* had been temporarily abandoned and then again resumed. Cunard officials state that the superliner will be completed as soon as the company's financial position permits. Cunard's plans also call for a sister ship of the same size. The U. S. Lines have completed plans for two liners of 60,000 tons each and capable of a speed of 31 knots. Although they are destined for the Atlantic traffic, yet they are especially designed to pass through the Panama Canal—obviously for military purposes. Finally, the North German Lloyd has a five-year plan, dating from November, 1931, for the construction of 500,000 tons of new shipping, part of which will ply the North Atlantic.

The new tonnage outlined above forces the conclusion that the rapid increase of surplus tonnage will not be halted in the near future. Yet already suggestions have been made for agreements between the shipping interests of France, Britain, Germany and the United States, with a view to obtaining cooperation on tonnage limitation and on the scrapping or laying up of some of the older ships. This action suggests a possible solution of the problem. Previous failures of similar conferences, however, plus the disturbing influences of governmental policies, indicate that

[2] See Sternau, Howard E., "Problems in the Transatlantic Passenger Service," VIII HARVARD BUSINESS REVIEW 359, April, 1930.

[3] See Magnes, Jacob, "The Recovery of Germany's Merchant Marine after the War," IX HARVARD BUSINESS REVIEW 57, October, 1930.

success will be dependent upon many more factors than a mere wish to cooperate. The remainder of this article will be taken up with a discussion of these factors and the extent to which they may be dealt with successfully.

North Atlantic Problems

In attacking the problem faced by the shipping interests, the North Atlantic appears to be the focal point. Between New York and the various European ports the traffic is the heaviest and most varied and is of predominant importance to the major shipping companies. There the competition for passenger traffic reaches its most acute form. French, Dutch, German, English, and American lines operate over virtually the same route, while the Italian ships have gained a strong foothold in the New York passenger service as well. At the same time, however, the possibilities of successful unified cooperation are far greater than in recent years, for, as the result of pools and consolidations, the number of major interests to be considered has been reduced to five. In England the indefinite status of the White Star Line and the probability of its being absorbed by Cunard leaves but one interest to be considered there. The recently completed Dollar-Dawson-Chapman-Roosevelt-Franklin pool has resulted in the consolidation of the principal United States shipping lines into one unit. The two major German lines, the North German Lloyd and the Hamburg-American, after ending their long competition on the Atlantic by a pooling agreement dating from January 1, 1930, have recently combined their fleets under one management and pooled profits, although retaining corporate and financial identities. The Italian lines on the Atlantic —the Cosulich, Lloyd Sabaudo, and Navigazione Generale Italiana—have now merged into one company under the name "Italia." France has but one line of importance on the North Atlantic—the Compagnie Générale Transatlantique. Since the lines of other nations have but a relatively small tonnage on the North Atlantic, the above recent combinations should render any agreement between the British, French, German, Italian and American lines highly effective.

Cooperation as a Solution

It must be recognized at the outset, in attempting to establish a far-reaching form of cooperation on the North Atlantic, that there are two distinct groups in each country that must be brought into line: the shipping interests and the government. The two differ significantly in their points of view. Governments in almost all countries have given support to their shipping industry from a nationalistic as well as from a militaristic point of view. On the other hand, the shipowners have cared little for these interests, but have accepted government support as an aid to profits.

In drawing up the proposed steps of cooperation, it is logical for the private shipping interests, rather than the governments, to take the initiative and provide the original groundwork for the evolution of the plan. Unhampered by political ties and theories and desirous of placing their companies on a sou nd basis, the shipping heads should be able to go far in the initial negotiation necessary. The seriousness of the present situation should make the shipping companies willing to make concessions and to cooperate to an extent far beyond the conferences and agreements of the past.

Furthermore, the conferences that have been formed in the past, many of which still function, provide the shipping officials with a background of experience facilitating the successful operation of a new conference. Practically every line is at the present time a member of one or more conferences which have for their purpose the making of agreements to stabilize freight and passenger rates, to limit competition, to prevent successful competition from lines not in the conference, and to carry on other programs for the mutual benefit of the lines concerned. The extent to which some of these conferences have been carried gives an indication of what may be accomplished in the regulation of the business, where a true community of interests can be demonstrated.

Finally, the governments cannot go ahead with a plan for rehabilitating the industry until they are sure that the proposed measures are in line with the programs of the shipping companies and until the companies have made such agreements as render the governmental actions feasible. For example, if the limitation of subsidies is undertaken, the fear of competitive building must be removed by agreements to limit tonnage among the shipping companies rather than among the governments. Since the governments are bound to represent the shipping interests as a national policy, the companies must be reconciled to cooperative agreements before governmental action can be taken.

It must be realized that, even with the initiative being taken by the shipowners, the acquiescence of the governments may be difficult to obtain. The national merchant-marine programs, backed by the need for security, by mercantilist tradition, and by powerful shipbuilding interests, are definite obstacles to any proposal to hinder the continuous development of a country's mercantile sea power, particularly in view of the fact that few trade lanes outside the North Atlantic can support ships of the size and speed desired as naval supplements. For example, it is doubtful if the American government would ever agree to withdraw from active competition in the North Atlantic. Yet it is apparent that high construction and operating costs in this country make it impossible to operate a transatlantic line without government aid. Hence the United States Lines could not agree with other lines to renounce all subsidies, even though others in the conference felt that to be a desirable move. Similarly, Great Britain will probably never consent to any plan which will jeopardize her commanding position on the high seas.

The governments, however, because of the obvious economic necessity for limitation of tonnage, and because of the pressure which may be expected from the shipping interests when the advantages of cooperation are fully realized, may be expected to cooperate and make sacrifices to a greater extent than they otherwise would. Furthermore, since practically all governments are having difficulty in balancing their budgets, the present time is propitious for the reduction of expenditures for such aids. It is worth noting that statements made recently by the French Minister of Marine and the president of the Naval Commission of the French Chamber of Deputies indicate that their government would be heartily in accord with a limitation pact.

Organization to Achieve Cooperation

To the end that the greatest possible harmony between the shipping interests

and the governments may be obtained, together with the maximum amount of effectiveness, an administrative organization for the initiation and continuation of cooperative efforts is suggested below. This organization, similar to that outlined by Sir Arthur Salter,[4] is based on the principle that cooperation can be successfully gained only by securing an actual meeting of the representatives in authority of the various lines and governments. The proposed organization will seek to achieve the welding of the governmental and shipping companies' requirements by means of two groups which are to work in close association. The first of these is a conference made up of representatives of the shipping lines, and the second is a council of the members of the conference and representatives of the national governments involved. The function of the shipping conference is to deliberate upon and initiate measures for placing or keeping shipping on a sound competitive basis. Such policies as it decides upon will be in general form, which will then be submitted to the council for ratification if the nature of the step is such as to require it. The purpose of the council is to review and modify, if necessary, any plans submitted to it by the shipping conference and to make any recommendation which may be helpful. It is further expected to advise the separate governments through their representatives of the steps proposed, and to use whatever means seem wise to influence the ratification of the proposals by the governments if such action is necessary.

By means of this organization it is hoped that the operation of the conference will gain governmental approval, upon which much of its effectiveness will depend. Furthermore, because it will bring together shipping executives and governmental officials with authority, objectives should be gained with greater facility. With the addition of various committees, the details of the policies determined by these two bodies can be worked out. In conclusion, the organization, if given proper flexibility, should continue as a semi-permanent institution working for progress even after the present problems are disposed of, adjusting itself to changing conditions, and taking full advantage of the progress of international cooperation.

Possible Remedies

Since the mechanism for the proposed conference has been considered, there remain to be considered the specific objectives which may be chosen to remedy the present situation.

The most logical point of departure in attacking the whole problem is the question of excess tonnage and the continuation of competitive construction. Overcapacity, both existing and threatened, is the basic cause of present conditions, and it is the problem which all shipowners are most anxious to see cleared up. As a result largely of the failure to place any restraint on the building programs of the various lines, no attempt to deal with the tonnage problem thus far has met with any success. Because government aid to shipbuilding has been available, these programs have practically all been carried further than is warranted on an economic basis. Thus, while excess tonnage is of importance, the vital problem to be considered is the limitation of further competitive building. The existence of a common fear en-

[4] Salter, Arthur, *Allied Shipping Control during the War*. Oxford: Clarendon Press, 1921.

tertained by all shipowners, of the extremes to which competitive shipbuilding may be carried under governmental auspices, facilitates the solution of the problem.

It is probable that, given an opportunity for joint negotiations among the shipping heads, an agreement may be reached as to a basis of parity of ships between the various fleets. While it may be argued that such negotiations will meet with no better success than the numerous negotiations for disarmament, it is obvious that the economic motive is much stronger and that there is in this case, therefore, a much greater chance for success. It may be assumed that, if the fear were eradicated, other lines would be disproportionately assisted in further building by their governments; also that, if some basis of parity were agreed upon, the French, British, and German lines might willingly renounce governmental aids for shipbuilding purposes, upon completion of ships under construction or required to achieve such parity. The very general recognition of the undesirability of further building at the present time supports this assumption.

The attitude of the respective governments toward the question of accepting parity of merchant fleets on the basis of present conditions must not be overlooked, however. It has been pointed out that a major reason that some of the governments seek to build up their merchant marines is premised on naval considerations. But it may be concluded, since there is no evidence to the contrary, that upon the completion of the present building programs the different nations will be substantially satisfied with the size and strength of their fleets. Even if one nation should be somewhat disappointed, not only would it be faced with the opposition of the other nations and their shipping companies, but it might even be faced with the withdrawal of the support of the shipping interests in its own land, inasmuch as the latter's economic wishes would be opposed.

While it would be desirable to eliminate completely the construction subsidy, it is probable that an exception to this practice must be made in the case of the United States, and possibly Italy, because of their excessive costs of building. If future construction by the United States Lines were carried out with the approval of the conference, it is likely that other lines would not object to the granting of sufficient subsidies to put the cost of building on an equal basis with European countries. It is therefore concluded: (1) that a basis for mutual agreement lies in the problem of governmental shipbuilding subsidies; (2) that a realization of the economic wastefulness of much competitive building exists; and (3) that a decision mutually to renounce such subsidies, with the exceptions noted, will facilitate the achieving of agreements as to future building.

The Problem of Existing Tonnage

The problem of the existing excess tonnage is a more difficult one to solve; if the limitation of future building is successful, however, it may be expected to work itself out in a period of years. Furthermore, a revival of world business, and consequently a revival in world trade, will materially decrease the volume of surplus tonnage. Yet even with such a revival and a gradual increase in trade, excess tonnage will remain a problem and must be dealt with by the conference. With no practical opportunity for transferring this tonnage to other trade lanes in the

world, the most desirable solution would be a general scrapping of the boats now least fitted for service. However, while the benefit of such a program would accrue to all, the burden of the scrapping would fall in the main on British and American shoulders, since their fleets are the most obsolete. A straight program of scrapping, therefore, would be vetoed. A desirable alternative would be the formation of a pool, subscribed to by the conference lines, which would buy up obsolete tonnage to be scrapped. The British Board of Trade Report[5] of May 19, 1931, dealt with this possibility, but declared it impracticable because of the difficulty of determining when a ship is obsolete and because of the substantial difference between going and salvage values (estimated at an average of over $15 per gross ton). Serious attention to this aspect of the problem given by the conference might nevertheless lead to a successful solution.

As an alternative, the British lines favor the laying up of the slower and less profitable ships. While not providing a permanent solution to the problem, such a move, if generally accepted by the other lines, would be of immediate benefit and might lead to a later scrapping of their obsolete ships. In the meanwhile, however, it involves continuing high maintenance costs and postponement of income from scrap value.

Other Problems

The desirability of placing the Atlantic lines on a footing independent of governmental support, in the form of bounties and mail subsidies, is apparent. But the practicability of putting such a plan into immediate operation is exceedingly dubious. All subsidized lines are at present showing a loss, and the sudden withdrawal of mail subventions and other bounties would increase the deficits shown. This might have an unfortunate psychological effect upon the continued support of the rest of the plan. In addition, it would naturally meet with the disapprobation of the stockholders concerned. Nevertheless, *international standardization* of such governmental support, with the aim of achieving payment on a comparable basis, would be advantageous. It would eliminate a source of friction; it would reduce the disturbing element of uncertainty; and it would lay the foundation for future elimination of subsidies. Moreover, since such standardization would involve no serious sacrifice on the part of any line, and since it would be an important step in the right direction, the possibility of its acceptance is strong.

As a natural outcome of the establishment and regular functioning of the conference, much should be done on the North Atlantic along the line of improving certain conditions of operation, now the cause of considerable waste.

Under roughly similar circumstances in the past, it has been found possible to regulate the rates of two or more lines through mutual agreement. The recent general rate reduction, in spite of the opposition of the French Line, is an example. The objective of even more effective rate regulation in this conference should therefore be possible. Furthermore, any degree of success in the program of tonnage limitation should immeasurably facilitate the maintenance of a rate structure permitting profitable operation. However, it is essential that these rates be "reasonable." The United States Shipping Board, while countenancing pri-

[5] Reported in *The Times*, London, as of that date.

vate rate regulation in the past, has insisted that those rates be "reasonable and nondiscriminatory." Without question, other governments may be expected to assume the same attitude.

Another matter which has been successfully dealt with by previous conferences is the territorial division of European ports. The proposed conference should be able to obtain an efficient and equitable allocation of ports. It is possible that this allocation might be extended to American ports. The diversion of a certain amount of traffic to Boston should be given serious consideration. This port is closer to Europe, has cheaper and more accessible wharfage facilities than New York, and offers almost equal access to the interior.

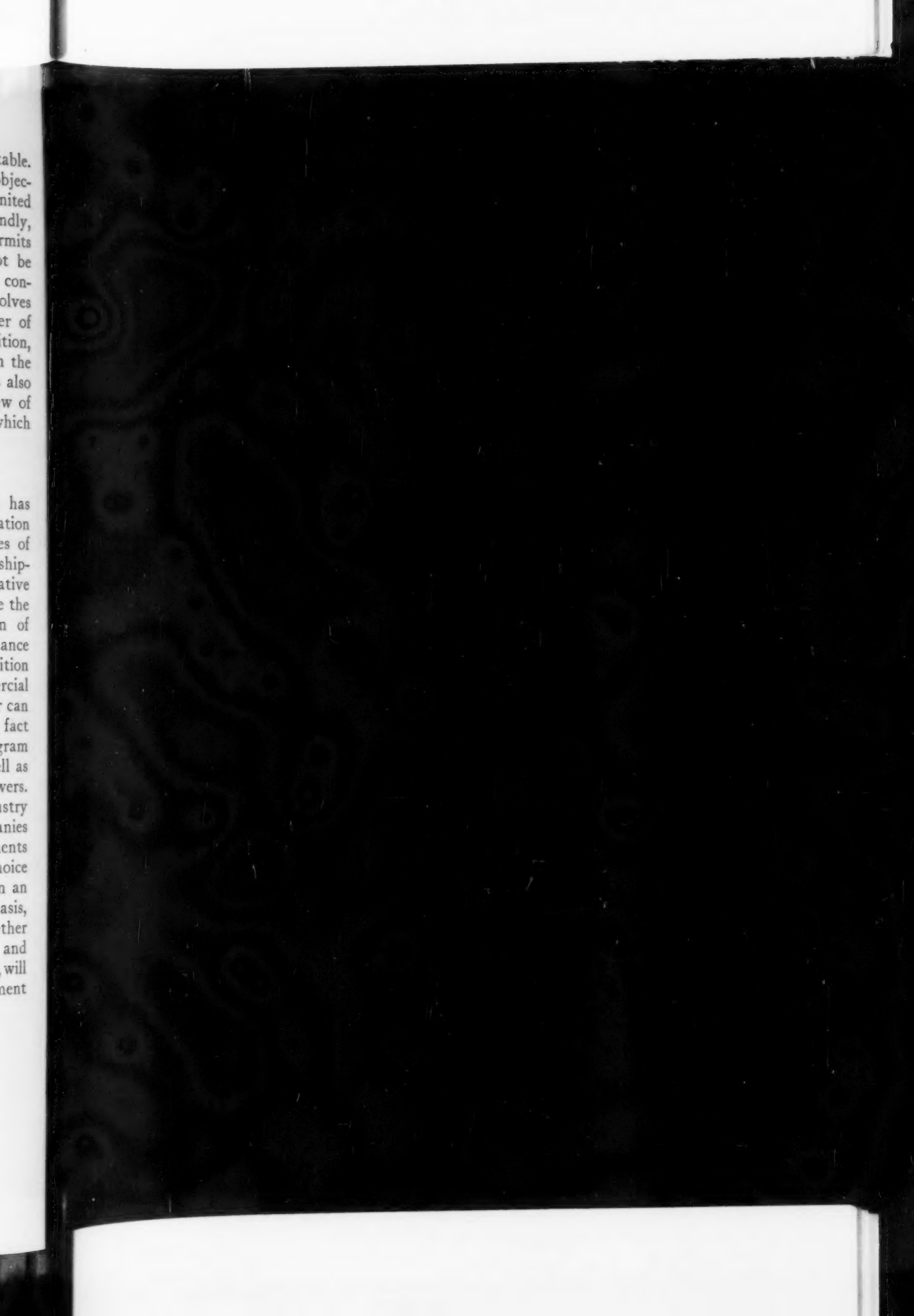
An existing source of wasteful competition is the tendency of liners to bunch their sailings on Fridays and Saturdays. A better distribution providing more regular service should be possible, with a rotation among the companies of sailings on the most desirable days. Such arrangements have been made among a few lines. Finally, a considerable reduction of operating costs may be effected through the use of a smaller number of piers, particularly in New York, where a new, large pier costs from $400,000 to $500,000 a year to operate. For example, the consolidation of the three Italian lines this year permitted them to reduce their pier applications to the port of New York from three to one.

A consideration of the possibility of pooling traffic, revenues, or both, forces the conclusion that in a conference as comprehensive as this the practical difficulties would be insurmountable. In the first place, governmental objection, particularly from the United States, might be expected. Secondly, the close coordination which permits pooling between two lines cannot be anticipated where five lines are concerned. Finally, such a course involves practically the complete surrender of individual initiative and competition, which is not only inconceivable in the industry in the near future, but is also undesirable from the point of view of both the industry and the public which it serves.

Conclusions

In view of the progress which has been made in international cooperation since the World War, the chances of important improvements in the shipping situation through cooperative effort seem good, particularly since the need is so vital. The limitation of further shipbuilding and the avoidance of wasteful, destructive competition are as urgently needed by commercial shipping as by armed navies. Nor can too much emphasis be laid on the fact that a *sincere* disarmament program must embrace the merchant as well as the naval marines of the world powers.

The future of the shipping industry lies in the hands of the companies themselves, and of the governments behind them. Theirs is the choice whether shipping will be placed on an economically sound and profitable basis, through cooperative effort, or whether the race for supremacy, backed and encouraged by nationalistic policies, will be allowed to continue to the detriment of the industry.



INDEX TO

HARVARD BUSINESS REVIEW

VOLUME X

OCTOBER, 1931–JULY, 1932

AUTHORS AND ARTICLES

BARNES, JULIUS H. Government and Business....411–419
BEACH, EDWARD R. Double Features in Motion-picture Exhibition....505–515
BEVIS, HERMAN W. The Pitfalls of Partnership Agreements....366–372
BINGHAM, WALTER V. Management's Concern with Research in Industrial Psychology.... 40–53
BORDEN, NEIL H. Cooperative Advertising through Trade Associations....482–493
CLOUGH, SHEPARD B. The Evolution of Fascist Economic Practice and Theory, 1926–1930....302–310
COFFMAN, PAUL B. Testing for Ability in Management....269–279
COMPTON, WILSON. Lumber—an Old Industry—and the New Competition....161–169
COPELAND, MELVIN T. Revising the Anti-trust Laws....292–301
DAKIN, ALLIN W. Foreign Securities in the American Money Market, 1914–1930....227–240
DANIELS, WINTHROP M. Railroad Unification in New England in Relation to the Four-party Plan.... 8–14
DEWING, ARTHUR STONE. Investment Trusts.... 24–29
DONHAM, RICHARD. Looking Forward with the Tanner....170–180
DONOVAN, WILLIAM J. Should the Antitrust Laws Be Modified?....129–136
EBERSOLE, J. FRANKLIN. Deflating Indemnity Hopes and War Debts.... 1–7
EGELAND, JOHN O. Norwegian Shipping after the World War....311–322
FAIR, MARVIN L. The Unification of Railroad Terminals.... 85–96
FRAME, STANLEY T. Planning for the Newsprint Industry....441–452
FREDERIKSEN, DITLEW M. Two Financial Roads Leading Out of Depression....137–148
GRAGG, CHARLES I. Diagnosis and the Developing Science of Business....192–202
GRAHAM, DAVID. Research Expenditures and Their Effect on the General Electric Company....118–126
GRETHER, EWALD T. Market Factors Limiting Chain-store Growth....323–331
GULLET, JOHN S. Economic Planning *versus* Economic Sanction....357–365
GULLET, JOHN S. The Pneumatic Rail Car.494–504
HEERMANCE, EDGAR L. Self-regulation and the Law....420–429
HERRING, J. M. Public Interest, Convenience, or Necessity in Radio Broadcasting.280–291
HIGGINS, JOHN WOODMAN. Fine Arts in Mass Production....399–410
HOUGH, ROMEYN, B., JR. The Raw-material Aspect of Industrial Preparedness. (Wilton B. Persons, co-author).... 97–108
KILBORNE, RUSSELL D. The First Year of the Bank for International Settlements.... 54–61
LEARNED, EDMUND P. Recent Books on Marketing....332–340
LEWIS, HOWARD T. Purchasing in Relation to Industrial Marketing....181–191
LOCKLEY, LAWRENCE C. Recent Books on Advertising....213–221
MCNAIR, MALCOLM P. Trends in Large-scale Retailing.... 30–39
MAKEPEACE, ROGER S. Stabilizing Factory Employment....241–256
MANUEL, JOHN S., JR. International Cooperation as a Solution of the Shipping Problem. (William S. Manuel, co-author)....524–532
MANUEL, WILLIAM S. International Cooperation as a Solution of the Shipping Problem. (John S. Manuel, Jr., co-author)....524–532
MARTIN, ROBERT F. World Stocks, Prices and Controls of Foodstuffs and Raw Materials....430–440
MERIAM, RICHARD S. Discriminating Rates453–460
MORGENSTERN, OSKAR. Free and Fixed Prices during the Depression.... 62–68
OETTINGER, JOSEPH S. The Standing Receiver—A Major Step in Bankruptcy Reform....109–117
PERSONS, WILTON B. The Raw-material Aspect of Industrial Preparedness. (Romeyn B. Hough, co-author).... 97–108
PIKE, A. W. The Double-liability Aspect of Bank Stocks....516–523
ROORBACH, G. B. Recent Books on Foreign Trade....222–229

RORTY, M. C. How May Business Revival Be Forced? 385–398
SHERRILL, C. O. Business Problems of City Management 15–23
SKERRETT, R. G. Economic Significance of the Tank Car 461–470
SOMMER, ALBRECHT. Premium Advertising 203–212
SPLAWN, WALTER M. W. Legal Aspects of the Proposed Regulation of the Railroad Holding Company 471–481
STAMP, L. DUDLEY. The Geographical Approach to the Study of Some Business Problems 69–77
SWENSRUD, SIDNEY A. Distribution Problems of the Oil Industry. II 78–84
TERREL, CHARLES L. The Changing Value of Business Forecasting Services 348–356
WHEELER, COBURN T. Dollar Books—A Pricing Experiment 341–347
WHITEHEAD, T. N. Planning Standardized Components to Secure Variety in Products 257–268
WILBUR, DONALD E. A Study of the Policy of Dividend Stabilization 373–381
WOLFE, THOMAS M. Recent Changes in the Bituminous-coal Industry 149–160

BOOK REVIEWS

Recent Books on Advertising, by Lawrence C. Lockley. Review of: *Facts and Fetishes in Advertising*, by E. T. Gundlach; *More Profits from Advertising*, by K. M. Goode and C. Rheinstrom; *The Advertising Parade*, edited by Robert Hunt; *Financial Advertising in 1929*, edited by Richard F. Durham; *Tomorrow's Advertisers and Their Advertising Agencies*, by George Harrison Phelps; *The Advertising Appropriation*, by A. E. Haase; *The Advertising Handbook*, by S. Roland Hall; *Profitable Retail Advertising*, by M. E. Tobias; *Advertising, Its Economics, Philosophy & Technique*, by H. W. Hess; *Copy Technique in Advertising*, by R. W. Surrey; *Advertising and Its Mechanical Production*, by C. R. Greer; *Broadcast Advertising*, by F. A. Arnold; *Radio in Advertising*, by O. E. Dunlap, Jr.; *Advertising Real Estate*, by L. D. Herrold; *The Dickens Advertiser*, by Bernard Darwin; *The Ethical Problems of Modern Advertising*, the William A. Vawter lectures; *Effects of the Advertising Agency Commission*, by William J. Reilly; *Aesop Glim—Advertising Fundamentalist* ... 213–221
Recent Books on Foreign Trade, by G. B. Roorbach. Review of: *Trends in the Foreign Trade of the United States*, National Industrial Conference Board, Inc.; *Foreign Trade, Principles and Practices*, by Huebner and Kramer; *The Struggle for South America*, by J. F. Normano; *Some Aspects of the Tariff Question*, by F. W. Taussig 222–226
Recent Books on Marketing, by Edmund P. Learned. Review of: *Marketing Agricultural Products in the United States*, by Fred E. Clark and L. D. H. Weld; *Agricultural Marketing*, by Henry F. Holtzclaw; *The Cooperative Marketing of Livestock*, by Edward G. Nourse and Joseph G. Knapp; *The Merchandising of Drug Products*, by Paul C. Olsen; *Men's Wear Merchandising*, by Kenneth Dameron; *Commodity Marketing*, by Ralph F. Breyer; *Department Stores*, by Boris Emmet; *Profit Principles of Retailing*, by Harold B. Wess; *The Buyer's Manual*, edited by James L. Fri 332–340
Books Received 127–128, 382–384

SUBJECT INDEX

A

Ability in management....269–279
Accidents, industrial....45–48
Accounting....454–455
Administration in business....193–196, 198
  See also Organization
Advertising....213–221, 261, 330
  cooperative....482–493
  newspaper....289, 443–445
  over radio....289–290
  premium....203–212
Africa....71, 72, 74, 75, 107
Agencies
  exclusive....122–124
  forecasting....348–356
Alcohol....464, 465
Alexander Hamilton Institute....350–352
Aluminum industry....175–176
American Telephone and Telegraph Co.
  ....26–28, 118, 272
American Tobacco Co....204, 272–273, 290, 472
American Woolen Co....272–273, 275
Antitrust legislation....125, 420, 428
  administrative change in....134–135
  criticisms of....293–294
  modification of....129–136, 294–297
  philosophy of....131–132
  revision of....292–301
Appeals
  buying....487–491
  motion-picture....506–507
Argentina....77, 230–231, 233, 321
Armor....408
Art
  in industry....399–410
  museums....402–405
Asia....74, 363
Assessments, stockholders'....518, 520–521
Assets, disposition of....371
Australia....70, 76, 229–231, 321
Austria....55, 59, 66, 205–209, 212
Automobiles and accessories
  ....78–84, 162, 260, 262, 265–266, 404

B

Bank for International Settlements....54–61
Banking....54–61, 414–415
  national and state....516–523
  relief....146–148
  situation in 1931....354–356
  See also Finance
Bankruptcy....109–117
Bank stocks....516–523
Behavior of employees....40–53
Belgium....209, 228, 241, 435
Bids, public construction....390, 395–397
Bills in equity....366, 372
Bituminous coal. *See* Coal
Blockades, economic....358–360, 363
Bonds....137–139
  building-participation....143–144
  conservative....376, 378
  German Government....360
  real estate....143–144
Bonuses....43, 151
Books....341–347
  on marketing....332–340
Boycott, economic....357, 364
Branch banking....415
Branch line of railroads....495–497, 500–504
Branded goods....66, 78, 83
Brazil....77, 107, 231, 233, 361, 430–432
Broadcasting, radio....280–291
Budgetary control....245–249, 271
Building and loan associations....140–142
Building trade....139–140
Business
  administration....193–196
  classifications....196–200
  cycle....25, 28, 348–356, 374–381, 397
  depression
    62–68, 84, 137–148, 257, 269, 272, 293, 348–356, 373–381, 385–398
  forecasting of....241–256, 348–356
  government and....411–419, 423–429
  science of....192–202
"Business Problems of City Management" by C. O. Sherrill....15–23
Buying
  appeals....487–491
  habits....153–154, 325–326, 328
  motives....178, 180, 511
  See also Purchasing

C

California....39, 323–331
Canada....71, 74, 77, 229–231, 233, 236, 321, 470
Capital
  demand for....220
  export of....227–241
  impairment....518–519
  in a partnership....367–370
  investment in Norwegian ships....312–313

Capitalization of Bank for International Settlements....55–57
Capper resolution....361–362
Cartels, German....62–68, 296
Cement industry....486, 489, 493
Censorship of radio programs....283, 287–289
Census of Retail Distribution....31, 34, 323–324
Central America....77, 320
Central banks....59–60
Chain stores....30–39, 323–331, 345–356
"Changing Value of Business Forecasting Services, The" by Charles L. Terrel....348–356
Channels, radio....281–282, 285
Chemicals, distribution of....462, 464–468
Chile....77, 231
China....74, 76, 179, 229, 236
  Sino-Japanese situation....357, 360, 364–365
City management....15–23
Classification, business....196–200
Clayton Act....133–134, 292–293, 300, 472, 480
Cleveland Trust Co....349–351
Coal, bituminous, industry....149–160
Codes of ethics....299, 421
Codes of practice....421–422, 424
Coffee....430–432
Combination sales....203–212
Commercial bribery....422
Commodity prices....373–374
Compensation plans....40–53, 150–151, 156, 249, 370
Competition....482–483
  and the antitrust laws....292–301
  effect of trade associations on....420–423
  in coal industry....159–160
  in gas industry....489
  in lumber industry....161–169
  in motion-picture industry....505, 508, 512, 514
  in retail-food business....329–330
  in shipbuilding industry....526–527
  in tanning industry....170–172
  price....172–174, 451–458
  unfair....422–427
Competitive bidding....390, 395–397
Component design....262–268
Congress....361–362, 475–481
Conservation in lumber industry....166–168
  See also Standardization
Consolidation
  in newsprint industry....451–452
  in shipping....527
  of electrical plants....120
  of railroads....8–14, 85–96, 475–481
  See also Mergers
Construction
  financing of....139–140
  home....138, 141, 148
  public....391–398
Consumer demand....257–262, 403–404, 482–493
Consumer goods....254, 265–266
  See also specific commodities
Consumption
  of coal....152–154, 159
  of newsprint....442–447
  of world stocks....430–440
Contrabands....359, 362, 433
Control
  government
    125, 134–135, 203, 207–209, 240, 302–310, 411–420, 428
  of business....420–429
  of world stocks....430–440
  system of....269–272
"Cooperative Advertising through Trade Associations" by Neil H. Borden....482–493
Cooperative associations
  in grocery trade....329–330
  in lumber industry....163–164, 168
  in motion-picture industry....514
  in shipping industry....527–529
  in tanning industry....172
  See also Trade associations
Coordination of sales and production....243–253
Copper industry....432
Corporate State (Italy)....302–304
Costs
  joint....454–455
  of buying....189
  of doing business....24–25, 30–39, 342, 497, 501, 502, 532
  of marketing oil....80–84
  of premium advertising....209–212
  of production....64–66
  of research....118–126
  of training employees....40–53
Cotton industry....432–433
Cotton-textile industry....456, 486
Coupons....204–205, 210
Craftsmanship....399–410
Credit....145–147, 229–240, 352–353, 360, 361
Crises, economic....304–305
  See also Business depression
Cuba....208, 231, 236, 320, 434–435
Czechoslovakia....58, 206, 207, 435

D

Damask linen industry....488
Dawes Plan....3–5, 55, 58
  See also Reparation
"Deflating Indemnity Hopes and War Debts" by J. Franklin Ebersole....1–7
Demand
  analysis of consumer....482–493
  forecasting....245–248, 253
  instability of....257–262
  stabilization of....249–250, 253
Demand and supply....78–84, 146, 149–160, 162
Denmark
  70, 207, 208, 228, 313, 314, 316, 320, 358–359
Dennison Manufacturing Co....182, 249–256
Department stores....31–33, 37–39
Depositor protection....516, 519–520, 522–523
Depression
  business
    84, 137–148, 257, 269, 272, 293, 348–356, 373–381, 385–398, 418–419
  effect of, on world stocks....430–440
  financial....139–140
  in coal industry....149–160
Design, component....262–268
"Diagnosis and the Developing Science of Business" by Charles I. Gragg....192–202
Discounts....203, 352
"Discriminating Rates" by Richard S. Meriam....453–460
Dissolution of a partnership....371

Distribution
by means of exclusive agencies....122–124
by tank car....461–470
of coal....152–154
of earnings....374–380
of lumber....162
of motion pictures....505–515
of oil....78–84, 461–462, 468–469
of securities....230–232
retail....30–39
See also Exclusive agencies
"Distribution Problems of the Oil Industry. II" by Sidney A. Swensrud....78–84
Dividends, stabilization of....373–381
Dole....241–242
"Dollar Books—A Pricing Experiment" by Coburn T. Wheeler....341–347
"Double Features in Motion-picture Exhibition" by Edward R. Beach....505–515
"Double-liability Aspect of Bank Stocks, The" by A. W. Pike....516–523
Drug trade, chain stores....30, 33, 34, 39
duPont, E. I., de Nemours & Co....176, 182, 270
Dutch East Indies....73, 434

E

Economic
balance....373–374
councils....411, 418
crises....304–305
planning....297–298, 385–398, 418–419, 449–451
policies....414–419
sanctions....357–365
theory....308–310, 385–398, 455–460
"Economic Planning *versus* Economic Sanction" by John S. Gullet....357–365
"Economic Significance of the Tank Car" by R. G. Skerrett....461–470
Education....285–287, 317
Efficiency in purchasing....188–190
Elasticity of demand....483
Electric-power industry....50, 453–460
Embargo on shipment of arms....362
Emergency relief....385–398
Employer relations with employee....40–53
Employment
factory....241–256
guaranty plan of....250–251
problems of....40–53
England....66, 77, 107, 205, 209, 312, 316
and reparation....1–7, 54–61
art in....405
industrial psychology of....52
investment trusts in....28, 29, 238–239
in World War....358–360
railroads in....8, 500
shipping industry in....526–527
textile industry in....65
See also Great Britain
Equipment installation....182–183
Europe....242, 261
See also individual countries
"Evolution of Fascist Economic Practice and Theory, 1926–1930, The" by Shepard B. Clough....302–310
Exclusive agencies....122–124
Executives, ability of....269–279
Exhibition, motion-picture....505–515
Export
of American capital....227–240
of leather....179
trade....525–526

F

Factory
employment....241–256
equipment....392–393
Far East....229, 231, 233, 354
Fascism....302–310
Federal budget system....414
Federal Building Bank plan....138, 145, 147
Federal Farm Board....296, 412, 432, 437, 439
Federal Land Banks....137
Federal Radio Commission....280–291
Federal Reserve System
30, 55, 57, 60, 228, 353, 388, 390, 395, 396, 414–415
Federal Trade Commission....290–295, 299, 423–429
Act....133–134, 292–293, 298
Finance
building....138–148
German....359–360
in newsprint industry....448–450
in tanning industry....170–171
international....1–7, 54–61, 227–240, 355
investment-trust....24–29
Italian....304
municipal....21
of subsidy plan....389–391, 396–398
private....229, 238
"Fine Arts in Mass Production," by John Woodman Higgins....399–410
"First Year of the Bank for International Settlements, The" by Russell D. Kilborne....54–61
Five-year Plan, Russian....30, 70
Fixed trusts....15–29
Fluctuations in raw-material prices....172–175
Foodstuffs....358, 362, 364–365, 430–432, 434–437
Forecasting, business....241–256, 348–356
Foreign affairs, effect of, on domestic business. 355–356
Foreign policy, financial....235–240
"Foreign Securities in the American Money Market, 1914–1930" by Allin W. Dakin....227–240
Foresight in management....272–275
See also Planning
Forest
conservation....166–168
ownership....447
France....209, 228, 411
and reparation....1–7, 54–61
railroads in....499–501
shipping industry in....526–527
"Free and Fixed Prices during the Depression" by Oskar Morgenstern....62–68
Free deals....203–212
Freight rates....156–157, 456, 463–464, 468
See also Railroads
Functional administration....412–419

G

Gas industry....159, 489
Gasoline, distribution of....78–84, 468–469
General American Tank Car Corporation....462, 468
General Electric Co....118–126, 255–256, 272

General Motors Corporation...75, 118, 270, 373, 377
"Geographical Approach to the Study of Some Business Problems, The" by L. Dudley Stamp. 69–77
Geography, commercial....69–77
Germany....228–231, 236, 312, 316, 354, 411, 435
art in....405
cartels in....62–68
communism in....6
economic planning in....357–363
industrial psychology of....52
prices during depression in....62–68
reparation by....1–7, 54–61
shipping in....526–527
use of premiums in....203–212
Ghent Plan....241–242
Gold standard....59–61, 230
Goodwill....371–372
Government
and business....411–419, 423–429
and shipping....524–532
control
....125, 134–135, 203, 207–209, 240, 302–310
of American cities....15–23
relations in lumber industry....167–169
See also Antitrust legislation, Federal Reserve System, Interstate Commerce Commission, Regulation
"Government and Business" by Julius H. Barnes
....411–419
Great Britain....229–231, 357, 411, 433–434
See also England
Greeting-card manufacture....488
Grocery trade
chain stores....30–39
in California....323–331
Guaranty, price....249

H

Hague Agreement of 1930....56, 58
Harvard Economic Society....350–351, 353, 355
Harvard Graduate School of Business Administration....28
Bureau of Business Research...32, 34, 35, 38, 193
Hedging....173
Hides. *See* Tanning, Leather
Holding companies....471–481
Holland....358–360
Home Bank Bill....141–142
Home building....138, 141, 148
Hoover, Herbert....164–165, 168–169, 354, 362
"How May Business Revival Be Forced?" by M. C. Rorty....385–398
Hungary....58, 435

I

Incentives, financial....43, 44
Indemnity. *See* Reparation
Independent grocery retailers....323–331
India....54, 72, 74, 76, 107
Industrial
accidents....45–48
art....403–410
marketing....181–191
psychology....40–53
purchasing....181–191
Inland water transportation....416
Insurance
export-credit....307
unemployment....250
Interest
on capital in a partnership....370
on partners' account....370
rates and business activity....355–356
"International Cooperation as a Solution of the Shipping Problem" by John S. Manuel, Jr. and William S. Manuel....524–532
International General Electric Co....121–124
Interstate Commerce Act....292, 300
Interstate Commerce Commission....156
and railroad consolidation
....8–14, 85–96, 463, 465, 471, 473, 475–481
Inventory....200–201, 276–277, 450
"Investment Trusts" by Arthur Stone Dewing..24–29
Investments....75
foreign....227–240
of partnership funds....369
of profits....376–377
See also Finance, Investment trusts
Iron industry....66, 400–401
Irving Trust Co....109–117, 349–351
Italy....205, 209
and reparation....60
Fascism in....302–310
shipping industry in....527

J

Japan....74, 205, 229, 231, 312, 357, 360–365, 434
Java....230, 435

K

Kellogg Pact....361

L

Labor
in coal industry....149–152, 156
in Italy....303–304
unions....156–157, 242
LaFollette Seamen's Act of 1915....316–317
Latin America....228–231, 233, 236
Law, self-regulation and the....420–429
League of Nations....357, 360–361, 363, 365
Leather....170–180
See also Tanning industry
"Legal Aspects of the Proposed Regulation of the Railroad Holding Company" by Walter M. W. Splawn....471–481
Legislation
on premium advertising....207–209
restrictive....125, 129–136, 420, 428
Liquefied gases....466, 469
Lira, stabilization of....304–305
Loans
foreign....228–240
on homes and buildings....138–148
See also Capital, Securities
"Looking Forward with the Tanner" by Richard Donham....170–180
Lumber industry....161–169
See also Newsprint industry
"Lumber—an Old Industry—and the New Competition" by Wilson Compton....161–169

Mc

McKinley Tariff Act....130–131

M

Machine Age....399, 403, 407
Mail-order houses....31, 37
Management
  ability in....269–279
  city....15–23
  of investment trusts....24–29
  of retail stores....30–39
"Management's Concern with Research in Industrial Psychology" by Walter V. Bingham...40–53
Manchuria....357, 360, 364–365
Maple Flooring Case....297–298, 422
Marginal purchase....483
Market
  analysis....153, 485, 487, 511
  resistances....323–331
"Market Factors Limiting Chain-store Growth" by Ewald T. Grether....323–331
Marketing
  industrial....181–191
  of books....341–347
  of coal....152–154
  of groceries....323–331
  of leather....176–179
  of lumber....162
  recent books on....332–340
  solutions....200–202
  steel products....401–402
  See also Distribution, Merchandising, Premium advertising
Mass production....259–260, 267, 399–410, 441, 461
Meat-packing industry....422
Mechanical changes in mining coal....149–152
Merchandising in relation to purchasing....185–188
  See also Marketing
Merchant marine....306, 311–322, 416, 524–532
Mergers
  in Canadian newsprint industry....451
  of railroads....8–14, 85–96
  See also Consolidations
Metals industry....173, 262, 399–403
Metropolitan Museum of Fine Arts....404, 406
Minerals....99–108
Mining, coal....149–152
Ministry of Corporations (Italy)....303, 307–309
Modification of antitrust laws....129–136
Money....227–240, 352–353
Monopolies....62–68, 455–459, 472
  See also Antitrust legislation, Restraint of trade, Unfair practices
Mortgages....139, 144
Motion-picture industry....505–515
Motor busses....496–497
Motormen, street-car....45–47
Municipal problems....15–23
Mussolini....306, 309, 310

N

National Bank Act....516, 518, 520
National City Bank....350–351, 354, 355
National Lumber Manufacturers Association....163–164, 168
Netherlands....229–230
  East Indies....433, 435
Newark Art Museum....404–405
New England
  metal trades in....400–402
  railroad unification in....8–14
Newspapers, circulation of....442–445
Newsprint industry....441–451
Norway....208, 229, 311–322
"Norwegian Shipping after the World War" by John O. Egeland....311–322

O

Obsolescence....171, 201–202, 272
Oil industry....78–84, 159, 292, 317, 462, 468–469
Operating costs....497, 501, 502, 532
Organization
  for research....53
  in business....198–200, 269–272
  in shipping industry....528–529
  municipal....20
Overbuilding in public utilities....393–394, 397
Overcapacity....170–172, 447, 529–531
Overexpansion....157–159, 392–393, 524–527
Overproduction....162, 168–169, 293
Ownership and control of railroads....472–481

P

Paint and varnish industry....421–422
Paper industry....50, 249–255
  See also Newsprint industry
Partnership agreements....366–372
Patents....120–126
Personnel problems....40–53, 316–317
  See also Labor
Peru....236, 435
Piece rate....150–151
Pipe lines....468–470
"Pitfalls of Partnership Agreements, The" by Herman W. Bevis....366–372
Planning....272–275
  economic....297–298, 357–365
  of standardized components....257–268
  product....257–258, 260–262, 267–268
"Planning for the Newsprint Industry" by Stanley T. Frame....441–452
"Planning Standardized Components to Secure Variety in Products" by T. N. Whitehead..257–268
Plant location....401–402, 463
"Pneumatic Rail Car, The" by John S. Gullet....494–504
Pneumatic tire for rail cars....497–498
Poland....203, 205–206, 209, 228, 435
Policy
  business....414–419
  changes in....275–278
Political government....411–413, 439–440
Pooling. *See* Consolidations
Population growth....326, 446
"Premium Advertising" by Albrecht R. Sommer....203–212
Preparedness, industrial....97–108
Price
  competition....172–174
  cutting....78–84, 200, 342
  discrimination....453–460

fixed and free during depression....62–68
fixing....203
fluctuations....172–175
maintenance....200
of books....341–347
of oil and gasoline....78–84
of raw materials....172–175
of world stocks....430–440
policy....187
stabilization....295–297
stratification of book market....344–345
wars....293
Problems
business....69–77
city government....15–23
post-war....1–7
Procter & Gamble Co....250–256
Producers' goods....254
Product analysis....175–179, 185, 257–268, 486
Production
and price....63, 83, 84, 293
and purchasing....181–191
and sales....243–253
control of....296
costs....64–66
mass....259–260, 267, 399–410, 441, 461
of coal....154–159
of leather....170–172
of lumber....161–162
of motion pictures....505–515
of pig iron....400–401
of world stocks....430–440
sustaining of....306
Profits....30–39, 368, 370–371, 374–375, 380
Profit-sharing plan....250
Programs, radio....283–290
Progressive assembly....263–267
Psychology, industrial....40–53
"Public Interest, Convenience, or Necessity in Radio Broadcasting" by J. M. Herring....280–291
Public utilities....393–394, 397, 453–460
Publishers, book....341–347
Purchasing
agent....181–183
and sales....182, 186–188
by chain stores....35
efficiency in....188–190
functions....182–191
habits....153–154
power....374–376, 483–485, 489
speculative....184, 185
"Purchasing in Relation to Industrial Marketing" by Howard T. Lewis....181–191

Q

Quality demand for motion pictures....506–513
Quantity
demand for motion pictures....506–513
production....259–260

R

Radio broadcasting....280–291
Railroads....8–14, 85–96, 153–160, 415–416
and antitrust laws....292
and discriminating rates....453–460
branch lines of....495–497
holding companies for....472–481
ownership and control of....472–481
passenger traffic of....494–497
pneumatic rail car....497–504
tank cars....461–470
"Railroad Unification in New England in Relation to the Four-party Plan" by Winthrop M. Daniels....8–14
Rate-making....453–460, 531–532
"Raw-material Aspect of Industrial Preparedness, The" by Romeyn B. Hough, Jr., and Wilton B. Persons....97–108
Raw materials
62–68, 73, 97–108, 120, 172–175, 264, 305, 358, 362–364, 432–434, 436–437, 447
Rayburn Bill....476–481
Receiverships....109–117
"Recent Books on Marketing" by Edmund P. Learned....332–340
"Recent Changes in the Bituminous-coal Industry" by Thomas M. Wolfe....149–160
Reciprocity....187–189
Regulation
of earnings....374–381
of holding companies....475–481
of premiums....207–209
of radio communication....280–291
Rental libraries....346–347
Rentals of films....508–509, 514
Reparation....1–7, 54–61
Reprinting of books....343–344
"Research Expenditures and Their Effect on the General Electric Company" by David Graham 118–126
Research, industrial
40–53, 118–126, 164–167, 174–179, 192–202, 241–256
See also Planning
Restraint of trade....298, 420, 428
See also Antitrust legislation
Retailing
associations....329–330
large-scale....30–39
of books....345–347
of coal....153
Returned goods....197–198
"Revising the Antitrust Laws" by Melvin T. Copeland....292–301
Rossoni....304, 308–309
Roumania....228, 359
Rubber industry....72, 74, 275, 433–434
Russia....30, 70, 107, 359, 361, 412

S

Salaries, partnership....369–370
See also Compensation plans
Sales
and production....243–253
and purchasing....186–188
better estimates of....243–245, 251
methods of....153–154, 203–212
of books....345–347
organization....153–154
promotion....482–493
resistance....489–490
See also Merchandising
San Francisco....323–331

Science of business....192–202
Sears, Roebuck & Co....37, 276
Seasonal variations....156–157, 249, 254
Securities....227–240, 376, 471–481
Self-government
  in business....420–429
  urban....15–23
"Self-regulation and the Law" by Edgar L. Heermance....420–429
Self-sufficiency, national....69–77, 97–108
Sherman Act of 1890....129–136, 292–301, 420, 423
Shipping industry....311–322, 524–532
Shoe industry....488–489
"Should the Antitrust Laws Be Modified?" by William J. Donovan....129–136
Silk industry....306, 364, 434
Sino-Japanese situation....357, 360, 364–365
Soap and soap products....251–253
South Africa....75, 230
South America....73, 74, 77, 205
  See also individual countries
Specialization....317–321
Speculation....173, 184, 185
Stabilization
  economic, plans for....387–398
  of business....190–191, 296, 421
  of demand....249–250, 253
  of dividends....373–381
  of factory employment....241–256
  of lira....304–305
  of newsprint industry....449, 451–452
  of production and prices....293
  of world stocks....430–440
"Stabilizing Factory Employment" by Roger S. Makepeace....241–256
Standardization....164–168, 185, 257–268, 531
"Standing Receiver, The—A Major Step in Bankruptcy Reform" by Joseph S. Oettinger....109–117
Statistics, industrial. 164–166, 172, 195–198, 245–248
Steamfitting supplies....245–254
Steel industry....399–410
Stock
  bank....516–523
  disvestment of....476–481
  market....25–29, 379
  ownership of....471–481
Stockholders
  and stabilized dividends....377–378
  liability of bank....516–523
  withholding profits from....375
Stocks, world....430–440
Strikes....155, 157, 303
"Study of the Policy of Dividend Stabilization, A" by Donald E. Wilbur....373–381
Style....178–179, 196, 201
Subsidies
  for business revival....389–398
  shipbuilding....530–531
Substitutes, synthetic....103–105
Substitution....163, 174, 177, 185
Sugar....434–435
Supplies, war....358–359, 362–365
Supply and demand....78–84, 146, 149–160, 162
Sweden. 70, 206, 229, 313, 314, 316, 320, 321, 358–359
Switzerland
  ....54, 59, 70, 206–207, 228–229, 241, 358–359
Syndicates (Italian)....302

T

Tank cars....461–470
Tanker fleets....317–318
Tanning industry....170–179
  See also Leather
Tariff, protective....101, 102, 129–131, 234, 307, 416
Task-and-bonus systems....151
Taxation
  Federal....390–391, 396, 415
  of chain stores....36
  of shipping companies....315–316
  of standing pulpwood....447, 450
Tea....435–436
Telephone industry....454
Terminals, railroad....8–14, 85–96
"Testing for Ability in Management" by Paul B. Coffman....269–279
Textile industry....50, 65, 456, 486, 488
Theaters....505–515
Timber trade....319–320
Tin industry....436
Topography....70, 328
Tonnage....524–526, 529–531
Trade
  associations
    163–164, 172, 206, 268, 293, 296, 299, 419, 420–429, 486–493
  balance of....306, 307, 358, 364
  foreign....222–226, 305, 307, 525
  German....358
  Norwegian....317–321
  practices....166, 299–300
  promotion....167–168
  unions....242, 329
Trade-practice rules....299, 424–426
Transportation....415–416
  Act of 1920....8, 416
  freight....453–456
  railroad-passenger....494–504
  tank-car....461–470
  See also Railroads
"Trends in Large-scale Retailing," by Malcolm P. McNair....30–39
Trusts
  fixed....15–29
  investment....24–29, 238–239
"Two Financial Roads Leading Out of Depression" by Ditlew M. Frederiksen....137–148

U

Unemployment....43–45, 151–152, 385–387
  funds....245, 249–250, 252
  relief of....251–256
Unfair practices
    15–23, 109–117, 129–131, 171–172, 180, 207, 292–301, 420–429
  See also Monopolies
"Unification of Railroad Terminals, The" by Marvin L. Fair....85–96
Unions, trade....156–157
United States Chamber of Commerce
  ....203, 208–209, 211, 294–295, 361, 413–419
United States Civil Service Commission....21, 22
United States Department of Commerce....167
  Census of Distribution....31, 34
United States Department of Justice....290, 292

United States Rubber Co. 270, 276
United States Steel Corporation 19, 118, 273, 373
United States Supreme Court 36, 294, 472
Urban self-government 15–23

V

Valves and fittings 245–254
Voluntary control 421–423

W

Wages 66, 68, 150–151, 156, 244–245, 374–375
See also Bonuses, Employment, Salaries
Walworth Co. 245–254
Warner Brothers Pictures, Inc. 273–274
War, World
86, 97–108, 204, 227–228, 241, 272, 302, 357–363, 524, 526
activities of Chamber of Commerce 417–418
debts 1–7
Norwegian shipping after 311–322
See also Reparation
Waste, elimination of 164, 168, 177
See also Standardization
Water power 160, 416–417
West Indies 77, 320
Westinghouse Electric and Manufacturing Co. 118, 122
Wheat 306, 436–437
Woolworth, F. W., Co. 26, 27, 34, 39
Worcester Pressed Steel Co. 407–410
"World Stocks, Prices and Controls of Foodstuffs and Raw Materials" by Robert F. Martin 430–440

Y

Young Plan 4, 5

Z

Zones, radio 281–282